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Clapp's Patent Coal-Cutting Machine.

WE are indebted to our valued contemporary, the *American Artisan*, for the following illustration of this new coal cutter. The description is from *The Engineer*.

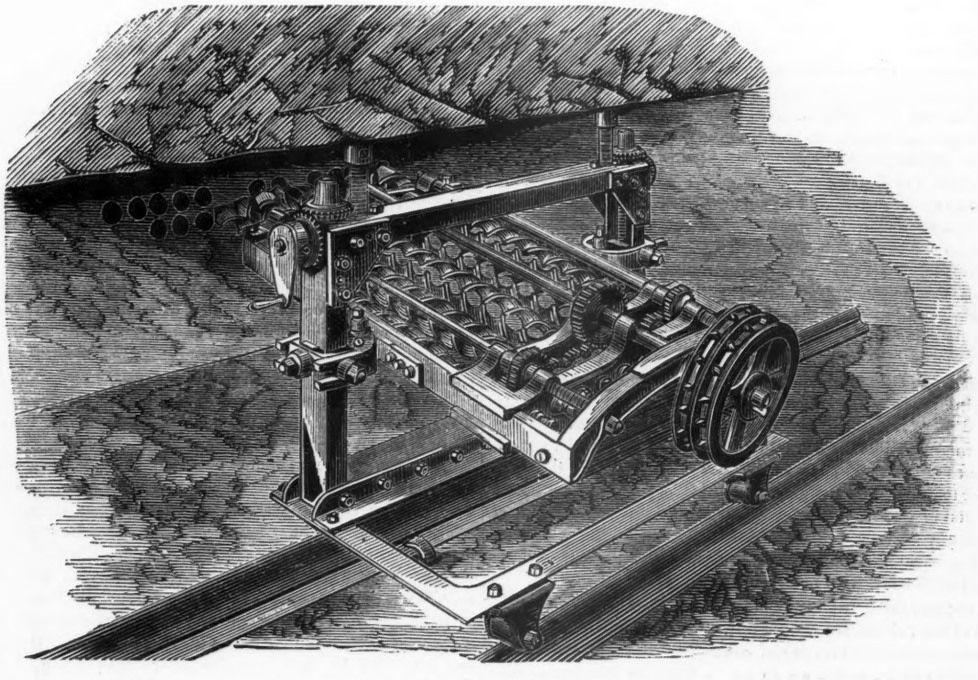
"We illustrate in the annexed engraving a new form of coal-cutting machine, patented by Mr. W. J. CLAPP, of Nantygle.

"This apparatus is also described as a 'multiple drilling apparatus,' because it is so constructed that nine drills or borers are introduced in a breadth of 2 feet inches, and the borers are made to cut 3 feet deep.

"The construction of this machine will be readily understood. The borers may be applied horizontally or vertically. In form the machine is square, and stands on four flanged wheels. The wheels are for facility of movement in front of the face of the coal. This is effected by means of guide rails, on lengths of framed sleepers, easily removable. It is proposed that they should be strutted and blocked on the floor of the working, so as to resist the thrust on the machine when at work. Suppose the machine to be in position in front of the face; jack-screws at the top of the frame are screwed against a short length of timber inserted between them and the roof, so as to secure the head of the machine. The borers are attached to a sliding carriage, and when the motive power has been applied, by means of a driving chain which is carried along the face of the coal at either end, or in any convenient place, the borers are caused to revolve, and the sliding carriage moved forward by means of a screw-bar at each side of the machine. Two horse-power is equal, it is stated, to driving the nine borers to a depth of three feet in three minutes. The machine is then reversed and the borers withdrawn. Seven minutes suffice for withdrawing and refixing, thus giving six insertions per hour, or a total of nearly 40 superficial feet undercut per hour.

"Some experiments were made at Newport last week, which tested the powers of the machine very fairly. A large block of Bath stone, two feet thick, was bored with the greatest ease in two minutes. A large piece of coal was also tried, and the experiment was equally successful, as far as it went, for the coal could not be kept in position so well as the Bath stone, the latter being much larger and heavier.

"The amount of work that can be done by one of these machines is equal to that of nine or ten men employed in 'holing-in' by the pick in the ordinary way; and for attending the machine, when at work, one man suffices, whilst for removing and readjusting two men only are required. It is further worthy of remark that the machine can be easily adjusted to the face of the coal, whether it is straight or slanting."



CLAPP'S PATENT COAL-CUTTING MACHINE.

The Wilmington, Illinois, Coal Field.*

BY JASPER JOHNSON, M. E.

TAKEN in all its bearings there is, perhaps, no more interesting coal-field than that locally known and designated as "Wilmington," both on account of the superior qualities of its product as a household and steam fuel, when compared with other Illinois coal, and its geological position. The territory underlaid with coal, to which this name was originally given, embraced a very small area, including only the south half of sections 31 and 32 (township 33 north, range 9 east) in Wilmington township, and sections 5, 6, 7, 8, 17, 18, 19, 30 and 31, with occasional outliers in sections 3, 4 and 9, and, possibly, in sections 20, 28, 29, 30 and 32 (township 32 north, range 9 east) of Reed township, in Will County, comprising eleven square miles of workable coal within the known basin. Borings indicate the presence of coal on sections 30 and 33 in Wilmington township, but it has not been demonstrated whether the conditions are favorable to successful exploitation. All coal heretofore found on sections 3, 4 and 9 in Reed township, has proved unprofitable in working, having no solid roof, and the coal being too soft to bear handling and transportation to market. The name was given to this portion of the basin doubtless from the fact that coal was first discovered near the village of Keeversville, in Wilmington township, four miles southeast of the city of Wilmington. For the first two or three years after mining operations had

* A paper read before the American Institute of Mining Engineers at Hazleton, Pa., October, 1874.

been begun, all the coal was taken to the latter named place by the Chicago and Alton Railroad for shipment to Chicago and elsewhere, the mines being located one or two miles from the main line, which was reached by side tracks built and maintained by the mining companies, hence "Wilmington coal," which has ever since been retained as a distinctive title and trade mark, notwithstanding a flourishing town of about three thousand inhabitants has subsequently been built up at the mines, and is known as Braidwood, from which all the coal is now shipped, and where all the companies have offices. The most appropriate designation would most certainly be "Northern Illinois Coal-field," as it is a well established fact that the district now under consideration is the most northerly of any in the State, the Silurian rocks jutting up against the coal on the north and east sides of the basin, and extending north to Lake Michigan, as a glance at any geological map will demonstrate; and, in fact, it has been proved that in many places the Silurian rocks underlie the coal at no very great depth. At present, however, the term Wilmington coal-field is applied to the district already described and all that that territory embraced within the townships of Felix, Braceville, Greenfield and Mazon, in Grundy County, and a portion of Essex township in Kankakee County.

The discovery of coal in this locality was the result of chance more than anything else, it having been found in sinking a well, there being no outcrop of rocks or exposure of the coal seam anywhere within the known limits of the original district. A few years ago, nothing could be seen but a bleak prairie, dotted here and there by small groves of stunted trees, the monotony being broken occasionally by a chain of sand hills which extends from near Morris, in Grundy County, running diognally across Will and Kankakee Counties, nearly parallel to the Kankakee river, to the mouth of Yellow River, in Starke County, Indiana, there being on the surface none of those distinctive features which generally record in unmistakable language the presence of coal. This portion of the country has suffered much from the effects of erosion, all the upper portion of the measures having been cut away. In fact, there are many evidences that the Kankakee and Des Plaines valleys were once the outlet of Lake Michigan, or else a large inland lake, having an outlet somewhere towards the Wabash river, occupied all this country. These personal observations of the writer are strengthened by the opinions of scientific gentlemen who have examined the field. In the Geological Report of Illinois, vol. IV., page 208, Prof. FRANK H. BRADLEY says: "Throughout the valleys of the Des Plaines, Du Page and Kankakee rivers the alluvial deposits constantly remind the observer that this county (Will) once bordered the lower ends and the outlets of Lake Michigan. The 'mounds' along the Des Plaines, which were formerly attributed to the industry of the aboriginal 'mound builders,' are evidently the islands and banks of the old western outlet; while the sandy ridges of the Kankakee valley, apparently identical in structure and in timber overgrowth with those now formed and forming on the shores of the present lake, tell us of the former existence of either an eastern outlet, by the way of either Deep Creek or Salt Creek (in Indiana) and the Kankakee, or, perhaps more probably, a lake-like expansion of the Kankakee before it cut down through the heavy bedded Niagara limestone and the underlying shaly calcareous sandstones of the Cincinnati group, which form the high bluff banks of this river along its course through this county. * * * * As subsequent in age to this river and lake alluvium, we may here refer to the large boulders, which are so abundantly distributed over the broad levels which cap the first terrace, in the south-western portion of this county. The majority of them are composed of 'green-stone,' or 'trap,' probably from the Lake Superior region, while the remainder furnish representatives of nearly all the varieties of metamorphic rocks. From their position above the black soil, it is evident that they floated to their present position on fields of ice, not long before the river retired to its present lower level. They are especially abundant at points where the surface configuration shows that eddies would be likely to form, which would retain the ice-floes until they had time to melt and drop the burdens of rocks, which they had brought from more nothern regions."

The same general features mark the south side of the Kankakee, in Grundy County, to the head of the Illinois river. A great many different theories have been advanced, by those whose opinions are of considerable weight, accounting for the peculiarities of this basin, which we do not propose to examine in this brief sketch; but there is no other theory so plausible or *probable* as the foregoing, viz.: that the entire surface contour of the district under consideration is the result of drift, after the upper measures had been cut away by the action of water. The town of Braidwood is *about* twenty-five feet above the "datum of six feet below the lowest registered water of Lake Michigan." Running North, towards the Kankakee river, the surface dips quite regularly, low water mark in the river indicating levels below the above mentioned "datum" of Lake Michigan at the following points: at east line of Grundy County, eighty-three feet; at head feeder of Illinois and Michigan Canal, below State dam, sixty-nine feet; at Prairie Creek, fifty-eight feet; under bridge at Wilmington, fifty-one feet; above rapids, thirty-nine feet; at east line of Will County, twenty-seven feet. The workable seam of coal in the field is nearly horizontal, dipping slightly to the South-West; nevertheless, in all the openings made so far, the miner is often troubled with "faults" and "rolls," materially interfering with the perfect drainage of the mines, and in remote instances interrupting the continuity of the seam. Such a case occurred in the old Robbins shaft, near Keeversville, in Wilmington township. This condition seems to have resulted from the irregularity of the denuded surface of the Silurian rocks, upon which the coal was deposited, as there is nowhere to be found any evidence of volcanic action. In some instances these contortions may be the result of the displacement of the subjacent limestone by solution in underground streams, subsequent to the deposition of the coal. This theory seems to be the most plausible one in accounting for the disturbed condition of the seam in the neighborhood of Jugtown, south of Goose Lake, in Grundy County, where the coal is found at various angles and depths, ranging from twenty to forty feet. The seam in this locality is not continuous, lying in what the miners designate as "pockets."

The rocks of the coal measures in Will County (the original Wilmington basin) are distributed over considerably less than two townships in the south-west corner of the county, and consist mainly of sandstones and clay shales. The rock formation of the entire county, so far as we know, after enumerating the coal measures, present the following: Niagara limestone, Cincinnati group and St. Peter's sandstone. In Grundy County the order is somewhat reversed, beginning at the top with coal measures, Cincinnati group, Trenton limestone, and St. Peter's sandstone. As before hinted at, there is but one workable seam of coal in Will County, though many persons still believe there is another bed below the one now being worked all over the field. The soft beds of green clay shale, east of the outcrop, encourage many in the belief of finding coal at a lower depth; but these shales nowhere contain the nodules of carbonate of iron (often containing vegetable or animal remains) which characterize the shales immediately overlying the coal. They doubtless belong to the Cincinnati group.

A number of years ago a deposit of coal, quite limited in area, was worked at Schoonmaker's ford, on the Kankakee river, which is now exhausted, and was evidently the remainder of one of the upper seams which had been destroyed by the erosive action of the mighty current that once swept through the Kankakee valley. The Schoonmaker coal was locally ten and a half feet thick, overlaid by brown and drab alluvial clays, the upper layers of the coal being left to supply deficiency of a rock roof. The upper and lower benches were clean, cubical coal, while the central portion had a very irregular fracture. As a whole, the coal was impure, containing disseminated pyrite and partings of calcite, and yielding a very large percentage of ash. The seam has been found in the river bank, in Grundy County, the exposures showing all the way from ten inches of coal to eight or ten feet of coaly shale and shaly sandstone. It was also found in one or two places in the bottom of the river, from three to four feet thick, with a floor of a few inches of fire clay resting upon the lowest beds of the Niagara limestone. This was the first coal worked, but has long been exhausted, as repeated borings within a half-mile of the original workings fail to discover the presence of coal.

The principal coal worked in the entire basin is the equivalent of No. 2 of the Illinois Valley section, as laid down in the Report of the Geological Survey of Illinois, Vol. III., page 5, the seam ranging from 2 feet 10 inches to 4 feet, most generally averaging 3 feet 3 inches. The coal is very bright, hard and compact, fracture partly conchoidal; layers thick and intersected by thin vertical plates of carbonate of lime. There are some impurities in the coal, consisting of small quantities of pyrite—"sulphur" of the miners—but it is generally found in bands which admit of easy separation from the coal, so that by exercising a little care on the part of miners and laborers engaged in preparing it for market, an unusually pure coal is furnished, as compared with other western coals. So far as known, it is the best steam and domestic coal yet discovered in Northern Illinois. It is impossible to give an analysis of the coal from the original field, as all the books and records of the companies operating there were destroyed, with their general offices, in Chicago, during the great fire of 1871. Below is given the average of the analyses of four samples from the same seam, in Grundy County, by Dr. BLANEY, as follows:

Specific gravity, 1.3; weight of a cubic foot, 80.87 lb.; moisture, 10.9; volatile combustible matter, 27.0; ashes, 5.25; carbon in coke, 56.85; quality of coke, cellular, slightly swollen; color of ashes, light gray.

The covering over the coal increases quite regularly going southwest, the surface gradually rising in that direction. 83 tests in the possession of the writer, scattered over Wilmington and Reed townships, in Will County; Felix, Braceville, Mason, and Greenfield townships, in Grundy County; and Essex township, in Kankakee County, show the coal at various depths, from 35 to 192 feet, the former being in sections 3 and 4, Reed township, Will County (on the north-east border of the field), and the latter on section 9, in Greenfield township, Grundy County, just south of the corporate limits of the town of Gardner. All openings made in Wilmington township, except one shaft, have been abandoned, being too near the outer edge of the field (we cannot appropriately say "outcrop," as the No. 2 seam nowhere comes to the surface in Will County) for profitable operation. The first shaft was sunk in 1865, to supply local trade. The Chicago and Wilmington Coal Company, composed mainly of Boston and Chicago capitalists, was organized in 1866, and commenced operations in Wilmington township. This Company has subsequently been consolidated with the Vermillion Coal Company of Streator, La Salle County, under the corporate name of the Chicago, Wilmington and Vermillion Coal Company, and is now the largest mining corporation in the State. The principal mines in the Wilmington coal-field proper are located in the vicinity of Braidwood, on sections 5, 6, 7, 8, and 17, in Reed township, Will County; the operations being carried on by means of vertical shafts reaching the coal at depths ranging from 72 to 115 feet. The following companies operate on the territory just named, their mining offices being located at Braidwood:

Chicago, Wilmington and Vermillion Coal Co.	3 shafts.
Eureka Coal Co.	2 "
Wilmington Star Coal Co.	2 "
J. Q. A. King (not incorporated).	1 "
Total.	8 shafts.

TO BE CONTINUED.

The Iron Ores of Sweden.*

By MR. CHARLES SMITH, Barrow-in-Furness.

CONCLUDED FROM PAGE 290.

ALTHOUGH there is so strong a similarity amongst all the Swedish "Mountain" ores, there is generally a sufficient divergence, in chemical composition, to give a separate character to most of the districts, and to some of the individual mines.

BISPBERG MINES.—Pre-eminent for its purity is the best Bispberg ore, which contains up to 70 per cent. metallic iron, or almost a chemically pure oxide; only a small proportion reaches this high standard, the bulk of the output varying from 50 to 60 per cent. The mines, which are thirty miles southeast of Fahlun, claim an antiquity of 600 years; they are very small, producing under 15,000 tons per annum. On account of the purity of the ore it is much esteemed as a mixture, but from the isolation of the mines it becomes very expensive to most of the works which use it. From the working drawings, it did not appear as if the production could be much increased. The greatest depth is about 700 feet, with the vein, which lies in quartz and talc-schist, dipping steeply.

PERSBERG MINES.—Much the largest iron mines in Sweden are those at Persberg, near Filipstad, in Wermland. The veins, of which the largest is 66 feet at its greatest width, lie altogether in helleflinta. The deepest workings are over 600 feet below the surface, the largest 400 to 500 feet. The annual production has lately been between 50,000 and 60,000 tons. The ore rarely contains less than 50, and rises to 60, per cent. metallic iron; it is much valued for furnace purposes, for its purity and freedom from deleterious ingredients; it commands a higher price than that from any other large mines, and, to a great extent, the iron ore market of that part of Sweden is regulated by its selling price. Persberg is said to have been worked for 800 years.

DANNEMORA MINES.—The most famous of the Swedish iron mines are those at Dannemora, in Upsala County, away from the main iron districts. The annual production is under 25,000 tons, and has varied but little for over 20 years. The ore contains from 25 to 60 per cent. metallic iron; very little has over 50 per cent., and the average is much below; most contains sufficient lime and silica to be smelted without a flux; it has also about 2 per cent. manganese. The highest percentaged ore does not make the best pig iron. The mines have been worked steadily for four centuries; the largest is in three sections, the center, an open-work, being the chief. The main vein is somewhat irregular; it has an average width of 100 feet, being 150 feet at the widest, and has been explored 900 feet in length in the open-work, which is 200 feet wide, with walls either perpendicular or slightly overhanging, of over 500 feet in vertical depth. The bottom of this extraordinary mine was covered, during my visit in the month of August, with large blocks of ice. The mines lie in helleflinta, of which there are several varieties; different trap rocks are present, with granite and gneiss. The production of the mines might be greatly increased, but they are held under a tenure that prevents more than a certain quantity being raised. The ore is never sold, but goes solely to the furnaces of the different joint proprietors. The largest owner is BARON DE GEER, the representative of a Dutch family, which, in the 17th century, acquired a practical monopoly over the iron trade of Sweden; most of their works and mines have passed into other hands, but they still retain Lofsta, where is manufactured, from Dannemora ore, the (L) iron, the dearest in Europe of its class.

GRÄNGESBERG MINES.—A new railway will shortly open up the Grängesberg district, in Dalecarlia, which it is considered may prove the most productive in Sweden. At present the mines are cramped by expensive transit. The ore in the most southern part of the district is of very high quality, and free from phosphorus; but this ingredient increases regularly in a northerly direction, until in the extreme north the ore is of little value.

NORBERG MINES.—The mines round Norberg, in Westmanland, produce about 70,000 tons per annum of ore, which contains from 45 to 50 per cent. metallic iron. The striped appearance of this ore, caused by fine layers of quartz amongst the iron oxide, is peculiar. Notwithstanding its large percentage of silica, it makes good iron. The veins are from 20 to 50 feet wide, and lie in gneiss, but are separated from it by bands, on either side, of helleflinta. About three years ago, a new ore was discovered here, containing 35 per cent. iron and 20 per cent. manganese, which it was hoped might produce spiegeleisen; but it is understood that the experiments have not been successful.

NORA MINES.—In the neighborhood of Nora, in Örebro County, there are many mines; those at Striberg are second only to Persberg in production; but the ore is the poorest in the district, with only 48 to 50 per cent.; whilst at Dalkarlsberg, which is the deepest iron-mine in Sweden—about 800 feet—the best ore has 68 per cent. metallic iron, and very much rises to 60 per cent. Much of the Nora ore contains manganese; at the Wickers mines up to 9 per cent. The manganiferous ores almost always contain mundic (sulphuret of iron); in some cases they have to be calcined twice to drive off the sulphur; they are also much more close-grained in appearance than ordinary magnetite, and some become brown with two or three days' weathering. Many of the Nora veins are red hematite, which rarely contains over 55 per cent. metallic iron. Some of the magnetic veins have been proved over a thousand yards in length.

SCHYSSHYTTAN MINES.—For the Bessemer steel trade, by far the most important mines in Sweden are those at Schyssbyttan, 10 miles from Smedjebacken, in Dalecarlia. The ore is a mixture of manganite and knebelite; the latter, a very rare silicate of manganese and iron, met with at Dannemora and a few other localities, but nowhere, except at Schyssbyttan, in any quantity. The combined minerals contain 50 per cent. iron and manganese; they produce, without the addition of any other ore, the highest class of spiegeleisen. The vein, which has more the appearance of a lode, can be traced along the surface for a considerable distance; it is 200 feet in breadth, and has been proved to 300 feet in depth, without any appearance of the bottom; the center of the lode is the best, at the edges the ore is not good.

TABERG MINES.—Far to the south of the general iron district, near Jönköping, in Smaland, is the remarkable hill of Taberg. As far as has been ascertained, this hill, which rises 380 feet above the level of the surrounding country, is a solid mass of close-grained serpentine, containing on an average about 30 per cent. metallic iron, and which is in appearance very like some of the hematite ores of the North. Two sides of the hill are perpendicular, and form quarries, whence has been taken for years the supply of ore for a dozen furnaces, which altogether have only an annual production of 3,000 tons pig iron. This iron has been found well suited for a few purposes, and is very tough; but the demand is limited. The heavy percentage of magnesia in the ore has hitherto been an insuperable obstacle to any large manufacture. Were this difficulty overcome, this hill would be one of the most valuable iron mines in the kingdom.

* A Paper read before the British Iron and Steel Institute, at Barrow-in-Furness, September, 1874.

MODE OF WORKING MINES.—The foregoing are the chief representative iron mines in Sweden, either for quantity of production, or quality of ore. All the mines are much alike in character, with the exception of Dannemora partly and Taberg wholly, as the mode of working is almost identical. In some cases the veins of ore come to the surface; but generally they are discovered by a magnet of peculiar construction, so made that the needle can dip as freely as turn horizontally; as soon as these magnets come over a body of magnetite, the needle swings round and points downwards to the mineral. When the presence of the ore is ascertained, a large hole is usually made down to the vein, which may be worked open for a short time, but as most dip at a steep angle, the ore is mainly obtained by mining. As the walls are solid, only a trifling amount of timber is used, often none at all. The surrounding rocks are so firm, that it rarely happens any are brought down by the constant blasting; the only mine that I saw, during a lengthened tour through the Swedish iron districts, which had given way, or become unsafe, by the rock crushing, was at Guldsmedshyttan, in Örebro County. The whole of the "Mountain" ores, without any exception, have to be blasted. The small shafts, that may have to be sunk through overlying granite drift, are frequently of very rude construction, bound round with withes and, if not round, of no regular shape. The drainage of the mines gives much trouble; except where steam is unavoidable, hydraulic power is always used, and often the pumps are worked by bobs of immense lengths.

ROYALTY LAWS.—Royalties in Sweden belong half to the landlord and half to the discoverer of the mineral; but the former may take half the mine, if he elect to do so. On finding any deposit, in the case of iron by magnet or otherwise, an application is made to a government official, termed bergmäster, who grants a certificate of ownership, should no adverse claim be presented and proved within a given time. These bergmästers, of whom there are ten, have each a separate district, the whole kingdom being divided amongst them. They have very considerable power, and appear to settle almost all mining disputes.

VALUE OF IRON ORES.—The value of the iron ores varies to a great extent, depending not only on chemical composition, but also to a very great degree on local position. It has to be remembered that the key to the Swedish iron trade is not the mineral, but the fuel, supply. This latter has been annually growing in relative importance, until lately it has become the chief particular. Charcoal still remains, notwithstanding the importation of foreign coal and coke, the main fuel of the country; and as it deteriorates most materially in transit, the fuel supply determines the locality of most of the Swedish works. Often ore is carted 20 or 30 miles, or transported over 100 miles by road, canal and railway; whilst furnaces have been built in Finland, where there is but little native ore; or in the Hernösand district, up the Gulf of Bothnia, where there is scarcely any, to save carriage on the charcoal. The ore in this way has often to bear a most burdensome carriage, and its cost varies for every works. As far as possible, the annual supply is laid in during the winter, as it is more cheaply transported over the snow and ice, than by road in summer. Many furnaces are dependent on a hard winter for obtaining any supply at all; and such, during a winter like the past mild one, when there was scarcely any snow, are obliged to be blown out. When the furnace proprietor raises his own ore, the cost varies probably from 3s. to 16s per ton, delivered at the works; and some of the best ores are worked the cheapest. Norberg ore, with 50 per cent. iron and much silica, is quoted about 16s per ton delivered at Strömsholm, on the Mälar Lake, where sea-going vessels can load. Ordinary ores, with a little over 50 per cent. iron, are sold in Wermland and in the Nora district, at about 27s. per ton, delivered on the railway or at some mining center. Persberg ore would be more expensive, and is quoted on a sliding scale according to percentage. Dalkarlsberg ore, when containing 68 per cent., is quoted over 30s. per ton delivered on the railway. The majority of these ores would have to bear heavy carriage in addition to these prices, which are from 50 to 100 per cent. higher than in 1871.

CONCLUSION.—In conclusion, I have only to regret that this sketch does so little justice to the subject undertaken, but I shall be satisfied if it has enabled the members of the Institute to obtain a clearer perception of the marvellous resources in iron ores possessed by Sweden. At present the iron trade in that country is cramped by want of fuel, labor, capital, and means of transit. But every year now should lessen these deficiencies, and, and we may, perhaps not without reason, look forward to a not distant future, when the iron trade of Sweden will be of European importance, not alone from the quality, but also from the quantity, of the metal produced.

Gauley-Kanawha Colliery Company.

WE were anxious to give our readers some account of the proceedings at the meeting of this company, held on Thursday, but, on calling, we were informed that no reporter would be admitted. The reason for this refusal was as novel as it was original. The success of the concern, we were informed, was so great, that the directory, in their wisdom, deemed it would be imprudent to admit the outer world to a knowledge of the truth. Like the Eleusynian mysteries, whose wholesome knowledge was restricted to the chosen few, the progress of this Virginian colliery is to be sacredly communicated to the initiated alone. Can it be that, like some other well-known transatlantic schemes, the less that is said about it the better? The idea may be erroneous, but it is suggested by the strictness with which the secrets of this society are kept from the outer public. Another solution presents itself, and we willingly adopt it—that the happy few who have shares in this flourishing concern fear to tempt intruders by telling the real facts; that, in fact, they would fain keep the serpent out of their Eden. In this connection it may be asked whether the wily serpent, whose seductive eloquence has produced such deplorable effects, would not, if he were exerting his calling now, deal in shares, and whether he would be a match for some of those who suffer from the taint of his original misdoing. Whatever may be the answer, it is clear that the directors of the Kanawha-Gauley Company are armed at all points, and, let the charmer sing never so sweetly, they will turn a deaf ear to his warblings. Why should they tell of the difficulties of making a road to their coal-fields, which have prevented, and are likely to prevent, its completion for some time to come? Why let an unappreciative public know the difficulties that surround their enterprise? Echo resounds only the why, and a little bird whispers, because . . . We shall not fill up the hiatus, because we could not hear what the litte bird in question said, but we think it had something to do with "all is not gold that glitters." It is cruel that companies will force us to write all out of our own heads, when we might have taken enough to fill, perhaps, two columns out of the heads of other people, clever directors, and such like, who are well up in composition and romance.—London *Mining World.*

THE ENGINEERING AND MINING JOURNAL.

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The Providence Water-Works.

WE find in the Providence *Journal* the report of a Committee of the Common Council of that city, with reference to the elaborate water-works in progress there, to which allusion has been made already in our columns. This report seems to be eminently fair and candid, and certainly contrasts admirably in these respects with the heated discussions which have led to its preparation. It already appears, from the comments made upon it, to be neither flattering enough to please the advocates of the present plans and arrangement of the works, nor bitter enough to suit their opponents. Its just discriminations and conclusions ought, we think, to put an end to a controversy which has degenerated into personality and vituperation. Without going much into details, and without taking the slightest interest in the charges of favoritism, jobbery and the like which have been agitating the peaceful precincts of Providence, we are moved to inquire briefly how so much discussion could have originated. The assailants of the water-works administration appear to have employed recklessly whatever missile came to hand ; and, very creditably to human nature, the mud they have thrown fails to stick ; but it seems to us that an occasional stone has hit the mark, and that this last report, in particular, goes straight to the center.

We find no reason whatever to doubt, and we do firmly believe, that Mr. SHEDD, the Chief Engineer of the works, has been honestly striving to do for the city the best thing that could possibly be done. His errors have been of judgment, not of intention. And the Committee's report reasonably establishes the soundness of his judgment on all points except one—the selection of the pumping-engines. On this point the Committee "cannot agree" with him ; and, we must confess, we cannot do otherwise than agree with the Committee. Nor can we ignore the fact that the Committee's reasons are not novel. They have discovered no objections to Mr. SHEDD's choice which might not have been equally well known to him when he first made his deliberate decision. How could an engineer of acknowledged ability, even though in civil rather than mechanical engineering, commit, and adhere to, a mistake which a Committee of Aldermen are competent to expose?

The explanation appears to be this. An enthusiast in his profession, and anxious to render this great public work a worthy monument of his skill, he was called upon to make, for the first time, a decisive choice of a pumping-engine. Mere accident, perhaps, or a reverence for authorities, or a shrinking from the thorough examination of modern patterns and their rival claims, seems to have given him an immediate bias in favor of the once renowned, but now discredited Cornish engine. This hasty conclusion put an end to his inquiries, and destroyed his impartiality. With a firmness worthy of a better cause, he has carried his point against argument and ridicule, friendly remonstrance and hostile reproach, slanders and facts alike. Every test he has made, every report he has written, since that fatal first adoption of an obsolescent device, has been marked with his unbending purpose to clear the way for the favorite which he honestly and obstinately preferred. In a word, Mr. SHEDD has had Cornish engine on the brain, and the abnormal cerebral pressure has not been favorable to a healthy action.

American mechanical engineers are so nearly unanimous regarding this type of engine that Mr. SHEDD's position as its advocate and builder is not an enviable one, either for him, or for the Commissioners who back him, or for the citizens who pay the bills. It is now pretty well understood that the old-fashioned duty-trials of the famous Cornish engines abroad will not stand critical examination ; that the miraculous economy claimed for this engine falls in practice far short of the wonderful ; and that even superior "duty" may be paid for too dearly in first cost. Mechanical science has not stood still since the Cornish engine was devised ; and progress in the department of pumping machinery has been especially note-worthy. The Providence engine is, so far as we are aware, the only one of its class now building for water-works in any part of this country. Of the hundred large water-works in the United States, not six are using the Cornish engine, and in the discussions preliminary to all the large contracts recently made, at Pittsburgh, Chicago, Milwaukee, Buffalo, Cleveland, Philadelphia, Toronto, Toledo, Brooklyn, Albany, and many other places, nothing has been heard concerning the Cornish engine, except in disparagement of its antiquated and disproved claims. At Jersey City, where one of them has been doing its best, the last contract for two more was cancelled, and engines of a different type were substituted. It may be chivalrous, but it is not wise, to hold out against such accumulated evidence as these circumstances and the figures of actual cost and working results afford.

The splendid audacity and firmness with which Mr. SHEDD (for the Water Commissioners of Providence are, as we take it, merely the mouth-piece of his views and plans) has maintained himself so long, compel our admiration, while they excite our regret. By sheer force of will, and power of impressing others with the faith that had taken possession of him, he seems to have defied public clamor, silenced the opposition of capable engineers, commanded the support of his employers, and triumphantly repulsed even the approaches of commercial rivalry, usually insidious and persistent beyond all measure ; so that, at last, he has been able to bestow, almost without competition or advertisement, a contract for a Cornish pumping-engine.

But the victory is a disastrous one. He has only conquered for himself an untenable position, from which it is too late to retreat. The water-works will, indeed, be his monument ; and the friendly, respectful, but mournful words of the Committee of Aldermen have the sound of an epitaph. Says the Committee :

"The water works for the supply of any city, where the necessity exists of raising the water to a certain height and storing it for distribution, may be divided into three general divisions : First, the reservoirs into which the water is to be raised and stored. Second, the system of pipes or conduits through which the water is to be distributed for use ; and, third, the pumping apparatus for forcing the water to the required height. The first and second of these general divisions are necessarily required to be, and it is doubtless the best economy that they should be, of as permanent and durable a character as the experience and science of the present day can devise and build. In these two divisions, as has already been stated, your committee take great pleasure in commending the work done as alike creditable to the city and honorable to the Commissioners and Engineer who have planned and executed it. In regard to the third division, namely, the pumping system for raising and forcing the water from the river into the reservoir, your committee gladly and willingly concede that the Water Commissioners and the Chief Engineer in providing the very costly apparatus which is now in process of erection at the pumping station at Pettaconset, have acted with the same regard as to what they believed to be for the best interests of the city, as in those portions of the work already spoken of ; yet your committee feel obliged to differ radically with the Commissioners as to the necessity of so large an outlay. The cost of the Pettaconset pumping station, now in process of erection for the Cornish engine, including pump well, foundations, and all essential requirements for the same, to September 1st last, as furnished us by the Commissioners, was two hundred and seventeen thousand seven hundred and forty-five dollars, sixty-two cents ($217,745 62) ; their estimated amount to complete same, seventy-seven thousand four hundred and fifty dollars ($77,450) ; Cornish engine, delivered and set up, per contract, one hundred and six thousand dollars ($106,000) ; tools and extra prices for same, fourteen thousand dollars ($14,000) ; rough pieces for same, to be furnished for same by Commissioners, seven thousand six hundred and thirty-seven dollars and forty cents ($7,637 40) ; stand-pipe, per contract, to be set up by contractor, twelve thousand dollars ($12,000) ; amount expended on natural filter basin, thirty-three thousand five hundred and ninety-four dollars and fifty cents ($33,594 50) ; thus making the total cost of the pumping apparatus connected with and including the Cornish engine, $468,427 52.

"This sum is the amount actually paid, or to be paid, for this purpose, without reckoning anything which would be properly chargeable to this department of the works for its proportion of salaries, engineering and miscellaneous expenses. If this were added, it would make the cost of the pumping department of the water works in round numbers very nearly a half million of dollars. This plan also requires for its completion an additional Cornish engine, which would add at least one hundred thousand dollars more to the cost of this department of the service. The Worthington engine, now in operation at Pettaconset, cost, including all repairs up to September 1st, 1874, $41,452 38. The building in which it is placed cost $9,718 09. This engine takes the water directly from the river, and has for three years past supplied the city with all the water it has used. It has not run, on an average, six full days in a week, and that the supply of water has been abundant, is a fact patent to every citizen. If this engine should be run day and night, it would furnish about double the quantity of water which is now daily used for all purposes, including, of course, the fire supply.

"It would not, however, answer to depend upon one engine for continual service, as there must occasionally be stoppages for repairs, and breakages are liable to occur. If another Worthington engine of the same cost and capacity as the one now in use were placed at the pumping station, the city would have, without any doubt whatever, sufficient pumping power to supply itself abundantly with all the water needed for ten or fifteen years to come. The simple interest upon the money which has been and will be expended upon the completion of the pumping station at Pettaconset, including engines, standpipe, chimney, and all other appurtenances belonging to this department of the service, would suffice to build a new Worthington engine, of same capacity as the one now in use, once in every

two years. The city would also have the advantage, by taking the course above adduced, of being in a position to avail itself at any time during the coming ten or fifteen years, and at a little comparative loss and without the slightest danger to the water service, of any improvement in pumping engines which the inventive genius of the country might produce. Whereas the course taken by the Water Commissioners in this matter precludes the city almost entirely, unless at an immense loss, from making any change or adopting any improvement in the very department of the water works where improvement may be most desirable, and is most likely to occur. For these and other reasons which will readily suggest themselves, your committee cannot agree with the Water Commissioners in their view of the necessity of spending so large an amount in the pumping department at Pettaconset."

We do not desire to add to the weight of this verdict by any words of reproach. If Mr. SHEDD had not been mistaken, if he had gone against his own convictions for unworthy reasons, we should have severer things to say of him. As it is, we are content to leave his part of the case where it is left by the committee, though we may recur to the general subject of the merits and tests of water-works machinery. There are some things which need to be said plainly, and without personal reference, concerning the duty—not merely of engines, but also of engineers and commissioners of great public works.

The Properties and Uses of Extra Soft Cast Steel, obtained by the use of Ferro-Manganese.

THE economic production, on a large scale, of cast steel, capable of being drawn in wire and hammered out, forms an important step in the metallurgy of iron.

The first products of this kind were made in the crucible; but this complicated process, and the large consumption of fuel of the best quality required, brought their cost so high that their use was necessarily limited.

BESSEMER, by his admirable process, first produced, economically, a soft malleable cast steel. Afterwards, by the use of the Siemens furnace, and the re-actions of ore and iron on cast iron, MARTIN gave us another means of producing cast steel. The products obtained by these two processes may be divided into two classes.

1. *Carburetted*, or *Hard Cast Steel*, in which the proportion of carbon may amount to ·005 to ·006.

2. The *Non-Carburetted*, or *Extra Soft Cast Steel*, in which the proportion of carbon amounts at most to ·001 to ·002.

Hard Cast Steel is generally produced by the addition of spiegeleisen to the molten metal, thus effecting its deoxidation by the manganese and its recarburation. In a few works, and with stock of a peculiar nature, the same result is attained without the addition of spiegel, by not carrying the refining process so far.

The characteristic properties of this cast steel are stiffness and facility in tempering. Under tensile strain it will stretch at most 10 per cent. before rupture, and will bear a strain exceeding 85,000 lb. per square inch. This steel is well adapted for rails, wearing well and having a suitable elasticity. Unfortunately, its use is pretty much confined to rails and springs; it is seldom hard enough or of sufficiently good quality to be used in the manufacture of tools, while the experiments which have been made to use it in machinery, plates, &c., have been, in general, unsuccessful.

Extra Soft Cast Steel.—Up to the present time the only successful method of producing this has been by the aid of ferro-manganese, in using which we deoxidise, without recarburising, the molten metal; for ferro-manganese, being from five to eight times as rich in manganese (the reducing agent) as is spiegeleisen, we add but a very small quantity of carbon while effecting a complete reduction of the metal.

Extra soft cast steel does not temper; it offers a great resistance to sudden blows or vibration, and in general stands the test of *bending double, cold.* Under tension it will sustain a load of from 55,000 to 72,000 lb. per square inch, with an elongation of 20 per cent. This new product possesses some of the properties of copper; it stands the most difficult riveting without that sudden rupture which happens so often in finished pieces of hard steel.

It possesses at the same time the malleability of wrought iron and the homogeneousness of a cast metal. These valuable properties render it applicable to a number of important uses.

The Manufacture of Extra Soft Cast Steel.—Ferro-manganese, which forms the foundation of the manufacture of extra soft steel, is an alloy of iron and manganese, in which the latter may attain the proportion of 80 per cent. The ordinary quality of ferro-manganese—that which is the most economically made—contains from 40 to 50 per cent. of manganese. The following is the method of using it:

1st. *In the Bessemer Process* it is essential to carry the operation, as is general in England and this country, to complete decarburisation. When we have reached the point where the different lines of the spectrum disappear, except the yellow line of sodium, the operation is continued for about 20 seconds, when the converter is tipped over, and the ferro-manganese, previously brought to a red heat, is thrown in. When the violent ebullition which this produces has passed, the metal is run into ingots. The amount of ferro-manganese added should be such that the proportion of manganese may be about 1 per cent. of the iron, so that if the ferro-manganese contain 50 per cent. of Mn., the quantity to add would be 2 per cent. of the contents of the converter.

2d. *In the Siemens-Martin Process*, when the test metal will stand bending double, cold, under the hammer, the ferro-manganese is added in the same manner and amount as in the Bessemer process, and the metal is then cast in ingots, as before.

Properties of Extra Soft Cast Steel.—The malleability of this metal, when hot, is wonderful. It can be twisted and bent in every direction, without showing the least sign of red shortness, provided the quality and proportion of the ferro-manganese used be suitable. In order to avoid an excess of tension in forgings, it is desirable to reheat the pieces after finishing. Cold it will, as already stated, draw out 25 to 27 per cent. of its length before breaking. This same property causes it to withstand vibration or shock perfectly; it yields under the blow, losing its shape, but not breaking. This valuable property makes the use of extra soft steel a guarantee of strength and safety in a great variety of applications.

Steel Boiler Plate.—It is scarcely necessary to enumerate here the disadvantages of iron plates; their buckling under the action of heat, their lack of homogeneousness, due to their mode of manufacture, are well known; yet, in order to replace it by steel plate, it was essential that the steel be as soft as the iron. This object is attained by the use of ferro-manganese in the manner above described. If we vary this formula we obtain an uncertain product, which will not stand punching or bending cold, without becoming so brittle as to unfit it for use. This is the reason why steel boiler plate has not yet taken its proper place in commerce.

TO BE CONTINUED.

Mining and Metallurgy of Nickel.

From the London *Mining World*.

THE demand for nickel is steadily increasing. Its uses in coinage, in alloys, and as a base for electroplating, and for plating iron and steel, &c., are becoming so extended, that this metal, which a few years ago was almost unknown, now forms the object of a large and flourishing commerce. So much, indeed, is this the case, that the supplies have fallen far short of the necessities of trade, and have induced the manufacturers of the alloy known as German silver to petition the German Parliament not to introduce a nickel coinage into the Empire. Germany, until within a very recent period, supplied almost all the nickel of the world, and though large mines of nickel have been discovered in the United States, it is from German sources still that the bulk is derived. It is calculated that, exclusive of American production, the whole annual product of nickel is about 600 tons. Of this amount more than one-half is employed in this country. Owing to the demand, the price of nickel has risen greatly; and German silver, into the composition of which it enters in the best qualities for only about one-third, rose lately about £2 10s. per hundredweight within one month. Nickel is a metal of brilliant whiteness, possessing very considerable ductility, and being easily malleable at 630 degrees of heat. At common temperatures it does not oxidise, and this property, together with its whiteness, has made nickel to be particularly selected for mixture with copper, in order to form the well-known white alloys which are either used as a substitute for silver or as the material to which the electro-plater applies the silver in the manufacture of plated articles. The specific gravity of nickel varies from 8·27 to 8·40 when fused, and from 8·69 to 9·00 after hammering. It possesses also a considerable degree of hardness, and gives to its alloys a power of resistance not possessed by the usual qualities of brass or of bronze. Nickel is slightly magnetic, and is principally found in a copper-colored mineral, which is called in Westphalia, where the largest nickel mines exist, *Kupfernickel*. Nickel is very commonly found in connection with cobalt and arsenic, and its extraction from the refuse of cobalt is now become a considerable source of profit. Since the discovery of nickel mines in America there is no import trade of this metal into the United States. The mines there opened are now sufficient not only to meet the local demand, but considerable quantities are being exported to Europe.

One deposit only is at present being worked in the United States, though several others, which will, doubtless, be opened at no very distant period, are known to exist. It is situated in Lancaster County, Pennsylvania, at about three miles from the Gap station of the Pennsylvania railroad, on the high land which separates the Chester and Pequea Valleys. The region is well known for its valuable minerals, as in addition to copper found in connection with the nickel, there are rich deposits of iron as well as limestone. The copper has long been known, and has been more or less worked for over seventy years; but, owing to the low grade and impurity of the ores, the operations have never proved favorable or been prosecuted with vigor. About eighteen years ago, it was discovered that the substance mixed with the copper was nickel, and thus a new incentive to carrying on the mine was presented. As had been anticipated, the amount of nickel found in union with the copper increases as depth is attained, and from what has been remarked it is generally believed that the deposit there found is, perhaps, the richest and largest which has yet been discovered. The ore is very hard, and the mining has to be carried on entirely by blasting. It has an iron-gray appearance, and is very heavy, the bright copper being very remarkable in many of the pieces. The amount raised from the mine is between 400 and 500 tons a month. To effect this, and to reduce the ore at the furnaces, 175 hands are employed. The depth of the mine is 240 feet. One engine, of the description styled Cornish, is of 75 horse-power, and is employed to keep the water down, whilst another is used to bring the ores to the surface. The furnaces are situated at about one mile from the mine, on very high ground, the selection of the situation being made for the double purpose of allowing the noxious vapors to be carried away by the wind, and in order to secure the proximity of the flint and limestone which

are required in smelting. The latter fact may continue to be a reason for keeping the furnaces in their present position, but the waste of materials such as arsenic and sulphur, which ought to be collected in chambers constructed for the purpose, make the site a matter of minor importance, if a proper method of reduction were pursued. In Germany, the process usually followed is that proposed by WÖHLER, for the reduction of the kind of ore denominated speiss, and which is similar to the ore found in the mines of Lancaster County, Penn. One part of the ore is fused with three parts of pearlash and three of sulphur. The arsenic thus forms a soluble compound with the potash and sulphur, whilst the nickel is transformed into an insoluble sulphuret, which is well washed in water and dissolved in nitric acid. A current of sulphuretted hydrogen is then passed through the solution, by which any copper, lead, or bismuth present are precipitated, and the nickel is then precipitated by the addition of caustic or carbonated soda or potash.

This precipitate is then washed and acted on by an excess of oxalic acid, which forms with the peroxyde of iron generally present a soluble, and with the nickel an insoluble oxalate, containing any of the cobalt which may have been contained in the ore. The oxalate is then dissolved in an excess of ammonia and exposed to the air, when, the ammonia evaporating, the nickel is deposited as an insoluble double oxalate, the cobalt remaining dissolved in the form of a soluble double oxalate of the metallic oxyd with ammonia. This nickel salt being ignited, leaves an oxyd, which may be reduced by heating with charcoal or dissolved in acid, and again converted into an oxalate, this time free from cobalt, and which is deposited as a bright green powder. The oxalate of nickel, if well washed, dried, and ignited in a close crucible, with an opening to permit of the escape of gas, is reduced to the metallic state.

The method of preparation followed in America is to crush the ore between the jaws of a powerful breaker, and to reduce it thus to comparatively small fragments of about half a pound each. It is then placed in kilns, constructed much after the style of the old-fashioned lime-kilns, but with lofty stacks, in order to increase the draught of air. Each kiln is calculated to hold from 80 to 90 tons of ore, and requires only a little wood to ignite it, the gases derived from the mass being sufficient to burn out the impurities, such as sulphur and a variety of others. A kiln burns in this manner, without requiring any fuel, for about six weeks. The ore is then carefully ground and mixed with powdered flint and limestone, the flint being in larger quantity, and is put into a furnace, of which there are three, along with a suitable quantity of coke. It is here smelted, there being three draws in the twenty-four hours, the work stopping neither night nor day, different sets of hands being employed. The product is then reduced to a fine powder, by being passed between powerful rollers, and in this state it is conveyed to the refining works, which are situated at Camden, in New Jersey. There the nickel and copper are finally separated by a process similar to that described above, and each prepared for market. All the dust which is produced by the blasting is mixed in bricks with the flint and limestone, which are the fluxes, and reduced in the furnaces in the same manner as is done with the ore generally. Nickel, when pure, is worth on an average about 10s. a pound, and even at that large price it is difficult to be procured. For the reasons stated, of the many uses to which nickel is applied, and the constantly increasing demand which is arising for it, a nickel mine is a most profitable kind of property, and one whose value is constantly increasing. It is true that some substitutes are proposed for nickel, and that several alloys of remarkable beauty and whiteness have been lately discovered into the composition of which no nickel enters. For many purposes, however, nickel possesses peculiar advantages, which make it preferable to other metals. This is particularly the case in plating steel, where, if applied to table and other knives, it does not interfere with the edge. We may, therefore, safely predicate that there will be little change in the value of nickel, unless it be a rise of price.

CORRESPONDENCE.

Free Coal.

Nov. 6, 1874.

TO THE EDITOR: SIR—The Secretary of the Treasury has been applied to by MR. DAWES for information in regard to a revision of the Tariff, looking to the extension of the free list. In his reply to the enquiry, he includess *Coal* among other articles, the duties on which, in his opinion, can be removed altogether without detriment to the revenue. It will be remembered that the proposed Reciprocity Treaty, which was laid before the Senate during its last session, but upon which no action was taken, provides for the gradual reduction of the duty on coal during the three years following the acceptance of that treaty.

The imports of Provincial coal into New York for 1874, up to November 1st, amount to only *about* 32,000 *tons*, yielding the paltry revenue of $24,000. The falling off in the importation of these coals is not due to any extent to the present tariff, but simply to the fact that they are not generally adapted to the wants of consumers. To demonstrate this, it is only necessary to refer to the very low price at which these coals could have been imported into New York, the present season, as compared with the cost of the domestic coals, used for the same purpose.

The gas companies of New York City and immediate vicinity require about 500,000 tons of coal annually. The cost of the Pennsylvania coals used by these companies the present year has been $7 50 per ton of 2,240 lb., at the wharf in New York, and this price is considered a satisfactory one by both purchaser and seller; whereas, the best gas coals from the Provinces, although costing to import an average of only about $5 currency per ton (duty paid), have found a market here to the extent of say 32,000 tons—*about one-sixteenth of the quantity required for gas manufacture.* The quantity of Provincial coal that can be imported into New York for other purposes than for gas manufacture is too insignificant to mention. If, with an advantage of $2 20 per ton in cost, these coals find such a small sale, it certainly will not be maintained that the removal of the duty of 75 cents per ton will have much effect on the interests of our domestic collieries. If we turn to the other side of the question we note that while the United States, including New England markets, will import in 1874 only about 70,000 tons of coal from the Provinces, on which we collect a duty of 75 cents per ton, the Dominion of Canada will import in 1874 nearly 200,000 tons of American coal, which is admitted free of duty. An annual increase of from ten to twenty per cent. in this latter trade is confidently predicted.

It has been intimated that if the Reciprocity Treaty should fail of acceptance by either the Canadians or ourselves—and it appears to meet about as much opposition on that side as on this—a duty would be levied by Canada on the importation of our coals. While, perhaps, we could not complain with a good grace of such a proceeding, it is quite evident it would be very injurious to our interests, and especially to those of the Pennsylvania coal fields, which mine the bulk of our shipments to Canada.

Would it not be to our interest to place coal on the free list, should the Reciprocity Treaty fail, if by so doing we continue to obtain the free entry to the Canadian markets?

P.

Electrical Signals for Mines.—At the Ophir mine, all the signals required to be made between the surface and the lower levels are now given by means of electricity. Electrical signal machines are placed at the stations on all the levels, with plain directions for operating them, and no mistake has ever occurred since these have been in use. The man wishing to signal to the surface has only to press his thumb on a knob, when there is instantly a stroke given on the engineer's bell at the surface and a return stroke on a small bell before him. Every stroke on the bell above is repeated on the bell before him, therefore no mistake can be made. When a bell rope is used it requires a very strong pull at the depth of 1,500 or 2,000 feet, and then the man pulling the rope don't know whether or not the bell above has been sounded. By this machine no return signal can be made until it has first been struck on the engineer's bell. D. H. BIRDSALL, the electrician in charge, is now engaged in putting up a new style of signal box for cages. A wire connected with the battery above goes up and down with the cage winding up and unwinding as the cage ascends and descends. By means of this invention a man standing on the cage may signal at any point of his ascent or descent by pulling a small knob ready to his hand. As many wires are seen running in various directions about the works as would be found in a first-class telegraph office. At the shaft they are all gathered together and go down the shaft in a bunch through gas pipes. Besides the signals for raising and lowering the cage, there is another set for calling the foreman from below. When the knob of the box used for this purpose is touched it makes the signals at the stations on all the levels simultaneously. A certain signal made on this box also sounds at all the stations, and means "Send up the cage immediately."—*Virginia Enterprise.*

COAL TRADE REVIEW.

Import Duty on Coal.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. o the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold.

Not otherwise provided for, per ton, 40c. gold.

This is the only report published that gives full and accurate returns of the production of our Anthracite mines.

NEW YORK, Nov. 13, 1874.

The Production of Anthracite Coal for the week ending Nov. 7, 1874, was as follows:

Tons of 2240 lb.	WEEK. Tons.	YEAR* Tons.
Wyoming Region.		
Delaware and Hudson Canal Co	44,957	2 036,917
Delaware, Lackawanna and Western R.R	59,069	2,134,333
Pennsylvania Coal Co	28,009	1,144,056
Lehigh Valley R.R	16,236	811,535
Pennsylvania and New York R.R	1,297	54,245
Central Railroad of New Jersey	28,895	1,269,746
Sold at the mines by L. & W. C. Co	616	18,822
	179,079	7,469,654
Lehigh Region.		
Lehigh Valley R.R	75,729	2,750,128
Central Railroad of New Jersey	23,773	1,011,670
Danville, Hazleton & W. B.R.R.,	....	33,127
	99,502	3.794,925
Schuylkill Region.		
Philadelphia and Reading R.R	141,472	4,559,084
Shamokin and Lykens Valley	14,842	832,715
	156,314	5,391,799
Sullivan Region.		
Sullivan and Erie R.R	222	30,855
Total of all the regions	435,117	16,687,233

* Year beginning Jan. 1.

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending Nov. 7, was as follows:

Tons of 2000 lb., except where otherwise designated.	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	50,841	2,075,098
Barclay Region, Pa.		
Barclay R.R. tons of 2240 lb	5,261	260,247
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R	4,134	194,600
Clearfield, Region, Pa.		
Snow Shoe	847	50,854
Tyrone and Clearfield	6,575	529,393
Allegheny Region, Pa.		
Pennsylvania R.R	2,106	175,024
Pittsburgh Region, Pa.		
West Penn. R.R	2,914	166,016
Southwest Penn. R.R	136	6,609
Penn. and Westmoreland gas coal, Pa. R.R.	10,852	749,835
Pennsylvania R.R	3,661	389,830
Kanawha Region, W. Va. to Oct. 31.		
Chesapeake and Ohio R.R	2,939	116,912
Shipments from *Block House Region, N. S.*, to Oct. 21.		
Consigned to the Provinces, tons 2240 lb	301	13,202
" " " United States " " "	447	14,420
" " Cuba " " "	571	....
Shipments from *Pictou Region, N. S.*, to Oct. 31.		
Consigned to the United States tons 2240 lb.	....	46,976
" " " West Indies " " "	873	10,636
" " Canada " " "	1,900	98,015
" " Other provinces " " "	1,848	67,247
" " South America " " "	2,225	2,889

The Production of Coke for the week ending Oct. 31.

Tons of 2000 lb.

	Tons.	Year. Tons.
Tyrone and Clearfield	..	699
West Penn. R.R., " " " " "...	728	13'714
Southwest Penn. R.R " " " " "...	4,966	350,358
Gas Coal, Penn. R.R. " " " " "...	560	33,010
Pittsburgh Coal, Penn. R.R. " " "...	744	57,069

The production of Anthracite for the week ending Nov. 7th was as follows: Wyoming Region 179,079 tons, being 38,307 tons less than the preceding week. In the Lehigh region, 99,502 tons, or 16,165 tons less than the week before, and in the Schuylkill region, 156,314 tons, being 4,378 tons less than the preceding week.

The total production of Anthracite from all the regions was for the week 435 117 tons, as against 533,454 tons the preceding week, (or an increase of 9,871 tons), and 365,255 tons for the corresponding week last year. From January 1st to Nov. 7th, there were produced 16,687,233 tons, as against 17,052,558 tons for the same period last year. The figures of last year's production are taken from the Pottsville *Miners' Journal*.

The production of Cumberland coal from January 1 to Nov. 7, inclusive, was 2,075,939 tons of 2240 b.. against 2,264,903 tons to the corresponding date in 1873. The production for the week was 50,841 tons, as compared with 64,610 tons for the corresponding week in 1873. This is a total decrease for the week of 13,769 tons as compared with 1873, and for the year, thus far, of 188,964 gross tons.

The receipts at Port Richmond were 63,000 tons; shipments, 47,000 tons; and balance on hand 109 000 tons.

Returns from Greenwich, Philadelphia:

	Bituminous.	Gas Coals.
Receipts	3,829	552
Shipments	4,794	573
On hand	679	562

The receipts of coal by the Michigan Southern RR. at Buffalo for the week were 4,591 tons. Receipts by Lake, 700 tons. The shipments by Lake, 1,130 tons.

The exports of coal from Baltimore for the week amounted to 400 tons, and for the year 62,966 tons, as compared with 59,668 tons last year,

Production of Bituminous Coal. 1874.

Tons of 2000 lb.	8 months.	Sept.	9 months.
Blossburgh Region	538,751	92,700	631.451
Barclay Region	223,525	36,140	259,665
Broad-Top Region	154,941	19,516	174,457
Cumberland Region	1,681,033	261,750	1,942,783
Clearfield Region	450,483	57,216	507,699
Alleghany Region	144,020	14,834	158,854
Pittsburgh Region.			
West Penn. RR	130,179	15,292	146,471
Southwest Penn. RR	4,879	601	5,480
Gas Coal, Penn. RR	616,505	50,309	676,814
Pittsburgh Coal, Penn. RR	297,155	47,580	344,735
Saw Mill Run RR	68,957	..	68,957
Cleveland and Pittsburgh RR	172,419	25,535	197,904
Pittsburgh, Cincinnati and St. Louis RR	404.175	26.865	431,040
Erie and Pittsburgh RR	167,354	34,209	201,563
Pittsburgh, Fort Wayne and Chicago RR	146,720	12,653	159,373
Castle Shannon RR	81,530	6,371	87,901
Pittsburgh and Connellsville RR	262,373	33,732	296,105
Monongahela Nav. Co	1,835,109	13,547	1,848,656
Keeling & Co	128,805	11,209	140,014
Wettengal & Gormley	7,689	1,896	9,585
St. Louis Region.			
Tenn. Coal & R.R. Co. to Aug. 1.	51,728	..	..
St. L. A. & T. H. R. R. Belleville Branch	112,799	..	..
B. & S. I. R.R.	63,940	..	..
Illinois and St. Louis	1,393	212	1,605
Indiana North and South RR	3,336	..	..
Evansville & Crawfordsville RR	9,305	1,684	10,989
Kanawha Region.			
Chesapeake and Ohio RR	94,465	12,144	106,609
Warrior Region, Ala.			
South and North Alabama RR	14,585	1,875	16,460
Cahaba Region, Ala.			
South and North Alabama RR	2,765	320	3,085
S. R. & D. R.R.	9,370	1,485	10,855
Chicago B. & Q. R.R	244 289	..	..
B. & M. R.; R.R	64,754	..	..
	8,378.852		

The demand for anthracite coal appears to have even fallen off from what was doing last week. The demand for stove and chestnut sizes is not so great, but this is accounted for by the mild weather which has prevailed. A very quiet trade is anticipated for December, when the season contracts will have expired. Prices are very irregular on account of the large stocks on hand, upon which great efforts are being made to work them off before the first of December, at which time prices considerably lower than those now ruling are anticipated, and the under-selling, heretofore reported, continues fully as strong, if not upon the increase.

With the prospect of a dull trade until the opening of the season of 1875, a two months' experiment in an attempt to reduce wages would be rather a benefit to both the producer and dealer, and give strength to the programme of the next season. With the downward tendency of all manufactured articles, and more especially iron, it is quite evident that a cheaper coal is required, and to meet this, a reduction of the miners' wages is necessary. If an industrious miner is permitted to do a full day's work, and not have his output circumscribed by a Union, he could readily stand a reduction of 25 per cent. in his wages, and then do better than he is doing to-day. It is a wrong policy for the coal companies to support a large number of unnecessary miners at higher wages than are being paid for labor requiring much more skill. With a "fair day's wages for a fair day's work," the producer would be enabled to offer greater concessions to the consumer, which would result beneficially to both the miners and producers. As to the producers, it would give a larger production, which results in a less cost per ton, and to the miners it would give steady, remunerative employment to all. The English coal-masters saw that it was contrary to their interests to have one miner say what quantity another should mine, and submitted to a strike rather than permit it. The only way by which our coal-masters can make desirable profits is to create a demand which will take about all they can produce, and to do that, they have got to *produce* a cheap coal and *sell* it cheaply. If a reduction in wages is to be made, it should be announced not later than Christmas.

As the coal producers are mostly the carriers, they will also have to make a reduction in freights.

Freights are firm. Rates to Boston, $1 30@1 35, and New Haven, 65c.@70c. There is no indication of an advance.

In foreign coals there is nothing doing, owing to there being none to offer. The market is bare, with none afloat.

Bituminous coal is without change. At Georgetown, $4 30@$4 40 is being asked, and at Baltimore, $4 60@4 75; but these prices are only nominal, and actual business for any considerable quantity is done at a concession. Freights from Georgetown to this city are $1 40; to Boston, $1 75, and to the Sound, $1 50; $2 has been paid for small vessels to Boston.

Messrs. BIRD, PERKINS & JOB, in their freight circular of November 7, say:

From the Provinces to the States.—There is no change to note in this business. Recent charters have been made, Sydney to New York, at $1 75.

From the Provinces to the West Indies and South America.—The decline in these freights has not added materially to the business; in the absence of any large orders there is no disposition to ship on speculation; occasional shipments are made on vessel's account; charters have been made from Pictou to Barbadoes at $3 50, gold, Pictou to Matanzas at 3 00, gold, and from Little Glace Bay to Havana at $3 00.

The near approach of the close of navigation at Pictou will likely prevent vessels seeking that port for business; but for the Cape Breton ports there remain nearly two months during which shipments can be made with safety.

The strike at the Pictou mines continues. The miners number 1000, and refuse to work themselves or allow carpenters, blacksmiths and others to do so.

Wholesale Prices of Anthracite Coal for Nov. f.o.b., at the Tide Water Shipping Ports per ton of 2240 lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
†Lackawanna and Scranton at Elizabethport & Hoboken	5 55	5 65	5 75	5 90	6 40	5 35
*Pittston at Newburgh	5 15	5 15	5 25	5 45	5 90	4 85
*Wilkesbarre at Port Johnston.	5 55	5 65	5 75	5 90	6 40	5 35
Plymouth, R. A	....	....	5 75	5 90	6 50	5 35
Susque. Coal Co. at Amboy W.A.	5 55	5 65	5 75	5 90	6 50	5 35
Kingston at Hoboken	5 55	5 65	5 75	5 90	6 40	5 35
***Lehigh Coals.**						
Old Company at Port Johnston	6 50	....	6 45	6 45	6 60	5 65
Old Company's Room Run "	6 00	....	6 00	6 00	6 35	5 35
Sugar Loaf at "	6 00	....	6 45	6 45	6 60	5 65
Lehigh Coal Exchange "	6 35	....	6 30	6 30	6 45	5 50
Honey Brook at Elizabethport	6 35	....	6 30	6 30	6 45	5 50
Spring Mt. C. Co. at Hoboken	6 35	....	6 30	6 30	6 45	5 50
Beaver Meadow at South Amboy	6 35	....	6 30	6 30	6 45	5 50
Schuylkill Coals at Port Richmond.						
Schuylkill white ash	5 05	5 15	5 25	5 40	5 90	4 45
Schuylkill red ash	...	....	5 40	5 50	5 95	4 55
Shamokin white and red ash	....	...	....	5 40	5 90	4 45
N. Franklin	....	....	5 85	5 85	5 90	4 45
Lorberry	....	....	6 20	6 20	6 20	4 80
Lykens Valley	....	....	....	6 85	6 85	5 40

* Small or Pea coal is quoted by these Companies at $1 35 per ton less than Chestnut.

† f.o. b. in New York Harbor.

Freight from Hoboken and Weehawken to New York	Per ton. 40c.
" " Elizabethport & Port Johnston to New York.	40c.
" " South Amboy to New York	45c.
" " Newburgh to New York	65c.
" " Port Richmond, "Phila." to N. Y. alongside	95c.
" " Rondout to New York by boat or barges of the D. & H. Canal Co. "delivered"	50c.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn, at Greenwich, Philadelphia	$6 25	$7 65
" " at S. Amboy	7 00	....
Red Bank Cannel Pa., at Phil	8 50	8 50
" " at S. Amboy	8 00	....
" Orrel, "	7 00	7 65
" " at Philadelphia	6 25	....
Youghiogheny, Waverly Co, at Baltimore	6 00	7 65
Despard, West Va. "	5 50	7 20
Murphy Run, W. Va. at Baltimore	5 50	7 20
Fairmount, W. Va "	5 50	7 20
Newburgh Orrel, Md. "	5 50	7 40
Cannelton Cannel, W. Va., at Richmond.	11 00	12 80
" Splint, " "	5 25	7 50
Peytona Cannel, " "	....	12 50
Sterling " Ohio	....	12 00
Straitsville, " At Sandusky, O	3 65	11 50

Foreign Gas Coals.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	12/@13/6	7 00@ 8 00
Liverpool House Orrel, at Liverpool	29/	13 00
Ince Hall Cannel "	52/	18 00
" Gas Cannel "	40/	15 00
Scotch Gas Cannel, at Glasgow, nominal.	28/	9 50
	Gold.	
Block House, at Cow Bay, N.S.	2 25	6 50
Caledonia, at Port Caledonia	1 87½	5 70
Glace Bay, at Glace Bay	2 00	5 50
Lingan, at Lingan Bay	2 25	6 50
Sydney, International and Reserve mines, at Sydney	2 25	5 75
Pictou, Albion and Vale mines, at Pictou	2 50	6 50

Steam and House Coals.

Broad Top, at the mine, $1 25; at Port Richmond, Phil	4 75@5 00	6 00@6 25
Cumberland, at Georgetown and Alexandria, Va	4 30@4 40	5 75@6 00
Cumberland at Baltimore*	4 60@4 75	6 25@6 50
Clearfield, "Derby," "Kitanning" and "Sterling," at the mines, $1 25; at Greenwich, Phil	4 75@5 00	6 25
James River, carbonite, at Richmond, Va	6 75	9 00
" bituminous.	4 00	6 25
*Schooner freights from Baltimore to New York are		$1 25
Barge " " " "		1 70

Retail Prices in New York.

Anthracite.

Per 2000 lb.	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 00	$6 20	$5 40
Lackawanna Coal delivered	7 60	7 85	7 10
Wilkes-Barre, delivered	7 60	7 85	7 10
Lehigh & Locust Mountain, del'd	8 00	8 00	7 50
Schuylkill Red Ash del'd	8 25		

The cost of delivering Pittston coal ranges from 40 cents to $1 per ton, according to distance from the yard.

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb	$23 00
Liverpool House Cannel " " "	25 00
American Cannel " " "	16 00
American Orrel " " "	16 00
Straitsville Cannel " " "	16 00
Carbonite " " "	12 00
Cumberland " " "	9 00

Coal Trade of Philadelphia.

PHILADELPHIA, Nov. 11, 1874.

Bituminous Coal, Wholesale.

Penn. and Westmoreland (Gas), f.o.b., Greenwich	6 25
Broad Top, (according to destination) f.o.b., Port Richmond	4 75@5 00
Clearfield f.o.b. at Greenwich, according to destination	4 75@5 00

Bituminous, Retail.

6 60 in yard, per 2240 lb., cartage added.

Anthracite, Retail.

Egg, per 2240 lb., $6 20; Stove, $6 25; Chestnut, $5 10; delivery costs, 75 cents extra.

Baltimore, Md. Nov. 11, 1874.

Reported by our Special Correspondent.

WHOLESALE PRICES PER 2240 lb.

ANTHRACITE.

	By cargoes.	In cars.
Wilkes-Barre, "Lee," or "Diamond,"		
Lump, steamboat	$5 15	$5 60
Broken	5 50	5 75
Egg	5 87	6 15
Stove	6 07	6 35
Pittston and Plymouth.		
Lump and steamboat	....	5 50
Broken	....	5 70
Egg	....	6 05
Stove	....	6 25
"Boston," freeburning white ash	....	5 50
Egg	5 87	5 70
Stove	6 07	6 05
Shamokin, (red or white ash)	....	6 25
Egg	5 82	6 05
Stove	5 02	6 15
Lykens Valley, red ash, egg and stove	6 02	6 55

From wharf or yard, wholesale, 50@75c. additional. By retail, all kinds and sizes, per 2,240 lb, $7@8 25.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 60	4 75
West Va. Gas Coal f. o. b. at Locust Point	5 50	....
Kanawha Cannel, coarse	13 00	....
Tyrone	7 25	....
Ritchie Mineral of West Virginia	1 00	....

Boston. Nov. 11, 1874.

Reported by our special correspondent.

There is nothing doing here in coal now; market as flat as possible; nominal quotations are:

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland, and Penn.	7 75
Caledonia	5 00	Waverly Co. Youghiogh'y	7 75
Pictou	6 15	Cannelton Cannel	13 50
Block House	5 60	Cumberland	5 70@ 6 10
Red Bank Cannel	10 00	Anthracite	6 50@ 7 25
Glace Bay	5 00	" Retail	7 50@ 8 00
Sydney	7 00		

Buffalo, N. Y. Nov. 11, 1874.

Reported by our Special Correspondent.

Freights to Chicago $1 12½; Milwaukee, $1 per ton. Vessels rather scarce. Trade very dull. Prices f.o.b. here during

Nov. are :—Grate and egg, $6 70 ; stove, $7 15 ; chestnut, $6 65 ; retail $1 per ton in addition.

We have little to add to former reports as to condition of trade. The same word formerly employed—dullness—still characterises the market. The cold weather, causing increased consumption for steam, also, in the mining regions, causes increased consumption of the nut size of soft coals, and makes it scarcer and in more demand. Prices of that grade have advanced 2 per cent. per ton here and at the mines. Other grades remain the same. The coals from the Reynoldsville basin and from off the low grade road still sustain their hold upon the market, both for gas and steam. Some of the mines at Catfish and on the line of Av. Railroad are out or working shorthanded. Only those mines supplying the New York Central Railroad are working anywhere near full. Shipments West of hard coal have nearly ceased. Prices remain as in October, with a prospect of "no change" until spring. Quotations therefore are the same. The Cameron mines, at Cameron, Pa., having exhausted the supply at their present opening of the "Mount Hope" vein (their best vein), are now building another inclined railroad to a new opening of the same vein on another portion of the property. This vein is the only one as yet developed that suits the public. It is a good steam coal, yields a fair quantity of gas, but lacks in illuminating power. The supply, too, will be limited, though other property near no doubt has the same vein. To sum up, we anticipate for the soft coal trade through the winter only continued dullness, and the trade confined to manufacturers ; and in the hard coal, a trade confined entirely to the retail, and that to the "hand to mouth" customers.

Per ton of 2000 lb.

	Slack.	Nut & Slack.	Nut.	Lump
Connelsville coke				6 50
Sterling cannel				6 00
Red Bank				5 75
Youghiogheny coal for gas				5 50
Briar Hill coal		3 25		5 00
Fairmount "		3 25	3 75	4 25
Catfish "		3 25	3 75	4 50
Stoneboro "	2 75		3 75	

Briar Hill coal, and Stirling and Red Bank cannels retail at $7 50 ; all other coals $1 per ton above wholesale prices.

Anthracite f. o. b. vessel.

Grate	6 70	Stove	7 15
Egg	6 70	Chestnut	6 65

Retail prices delivered and screened, $1 per ton additional.

Chicago, Ill. Nov. 9, 1874.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

No change in prices of coal. Weather warm. Demand for all kinds of fuel slack.

Retail prices per ton of 2000 lb. delivered to buyer.

		BITUMINOUS.	
Lehigh Lump	$10 75	Briar Hill and Erie	7 50@ ....
Lehigh prepared and car load lots	9 75	Walnut Hill (W. Va.)	6 50@ ....
Lackawanna, Wilkes-Barre and Pittston,*		Midway (West Va.)	6 50@ ....
		Cannel	8 00@ 9 00
		Blossburg	8 00
Grate, egg, and chestnut.	9 00	Indiana Block	6 00
Stove or range	9 50	Hocking "Brooks"	6 00
		Wilmington and Illinois	5 00

*75 cents off these prices for car load lots to country dealers and manufacturers.

Cleveland, O. Nov. 11, 1874.

No change in prices of coal. Business continues very dull, occasioned, to some extent, as far as the retail trade is concerned, by the very fine, warm weather. Lake freights on coal, west, have advanced rapidly the last week, owing to the great number of vessels going out of commission, November 1, by cancelling their insurance—the rebate obtained being more than they could figure on making during the balance of the season, at the low rates offered on grain from Chicago, Milwaukee, &c.

Freights here to Milwaukee and Chicago is now $1 25 per ton, "free to vessel."

Reported by our Special Correspondent.

Per ton of 2000 lb.

Youghiogheny, l'p, f.o.b.	$4 65	Straitsville, f.o.b.	$3 40
Youghiogheny, nut	3 60	Columbiana "	3 40
Briar Hill, (Church Hill).	4 25	Strip Vein "	3 65
" " (Brookfield)...	4 10	Mountain Blossburg (blacksmith)., f.o.b.	5 75
Massilon, according to quality	$3 40 to 3 65	Darlington and Sterling Cannel, f.o.b.	4 50
Hocking Valley, f.o.b.	3 50		
Anthracite, Lackawanna on cars, Egg			$6 85
" " " "		Stove	7 30
" " " "		Chestnut	6 90
Youghiogheny Coke, " "		here	5 50
Connellsville " " " "			5 75

Cincinnati, O. Nov. 10, 1874.

Specially reported by Messrs. A. BUCHANAN & Co., wholesale and retail dealers in coal and coke.

Please continue report as before ; no change in market here; business dull.

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	13 c.	$2 86
Pomeroy coal	8 c.	
Cannel coal	18c.	4 68
Semi Cannel	11 c.	2 60

The following are retail prices delivered:

Youghiogheny	18 c. $3 90@$
Pomeroy	14 c. —
Cannel	24 c. —
Kanawha Semi Cannel	15c. —
Anthracite	$9 50@11 00
Foundry coke	12c. —
Soft coke	100. —

From the *Cincinnati Gazette.*

The Secretary of the Coal Exchange presented to that body, Thursday night, a statement of the amount of coal on hand, as follows: Youghiogheny, 2,165,515 bushels ; Pomeroy, 690,300 bushels ; Cannel, 109,300 bushels ; Campbell's Creek, 158 000 bushels : Raymond City, 117,000 bushels ; Ashland, 203,000 bushels ; Kanawha, 47,600 bushels ; Coalburgh, 11,000 bushels; total, 3,501,715 bushels.

A week after Mr. COOK, who compiled the above statement, had made these inquiries, we took a look at the various yards in the city, and at the barges along the shore of the river, with the following result :

	Bush.
Afloat in barges	600,000
Spillard & Thomas' yard, Cumminsville	8,000
Charles V. Ross' yard, Cumminsville	6,000
Hengehold & Co.'s yard	25,000
S. W. Bard's yard	220,000
Oliver Perrin's yard	120,060
Zimmerman & Co.'s yards	100,000
H. J. Daggett & Co.'s yard	50,000
A. & G. W. Ross' yard	150,020
Jos. M. Kearney & Co.'s yard	50,000
Schmorer & Taylor's yard	30,000
Jos. Serena's yard	45,000
A Buchanan & Co.'s yard	200 000
Jno. Cochnower's yard	300,000
Marmet & Co.'s yard	500,000
Jos. Levy's yard	45,000
G. W. C. Johnston's yard	60,000
Thos. Dodsworth's yard	500,000
W. M. Hubbell's yard	25,000
W. H. Brown's yard	150,000
Jacob Gardner's yard	40,000
Total of coal in the city	3,224,000
Deduct coal afloat	600,000
Total of coal in yards	2,624,000

It will be proper to deduct say 10 per cent. from the above totals to allow for consumption since the various yards were viewed, which would leave nearly 3,000,000 bushels of coal on hand to-day for sale.

The Hocking Coal Company, which has an agency here, and the Cincinnati and Muskingum Valley Coal Company are daily shipping coal into the city.

Up to October 30 the coal shipments from Pittsburgh to Cincinnati during the present year amounted to 15,077,000 bushels, against 17,555,000 during the same ten months in 1873.

Detroit, Mich. Nov. 10, 1874.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

We have nothing to report different from last week, unless it be that trade is, if anything, somewhat quieter. The weather continues unusually pleasant for this time of year, and a great many prefer not to buy until they are compelled to. Anthracite for domestic use has advanced 50 cents per ton all around.

We quote :

Per ton of 2000 lb.

Lehigh Lump, per ton.	$10 50	Blossburg	8 50
Lehigh " prep. sizes.	10 00	Briar Hill	7 50
Wilkes-Barre, Grate and Egg	9 00	Willow Bank	7 00
		Erie	7 50
Wilkes-Barre, Stove and Nut	9 50	Massilon	7 00

Erie, Pa. Nov. 11, 1874.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Bituminous f.o.b.

Briar Hill lump	$4 00	Beaver lump	$4 00

Indianapolis, Ind. Nov. 10, 1874.

Specially reported by Messrs. H. MCCOY & Co.

Per ton of 2000 lb.

BITUMINOUS.

Best Block coal	$2 90	Indiana cannel	6 50
Best Highland	2 40	Hocking Valley	3 00
Block Nut	1 65	Youghiogheny	5 42
Highland "	1 65	Blossburg (smithing)	7 30
Block slack, per car load.	15 00	Piedmont "	7 75
Peytona, cannel per ton	8 50	Gas coke, per bushel.	9½c

ANTHRACITE (Lackawanna).

Grate	$8 70	Chestnut	8 60
Egg	8 70	Stove	8 85

Retail, per bushel of 70 lb.

Block	14c.	Peytonia Cannel	32c.
Highland	12	Indiana "	28
Highland Nut	9	Youghiogheny	25
Block "	9	Blossburg	27
Slack	7	Piedmont	30

ANTHRACITE.

per ton.		per ton.	
Grate	$10 50	Stove	$10 50
Egg	10 50	Chestnut	10 50

Louisville, Ky. Nov. 10, 1874.

Specially reported by Messrs. BYRNE & SPEED.

Please report our prices the same as last week. The demand is still light. All of the yards are being worked on, and unless we have water in thirty days the supply will be very short. Kentucky coal is coming in slowly.

Pittsburgh, per load of 1900 lb	$4 00
Pomeroy	
Buckeye Cannel	5 50
Peytona Cannel	6 00
Nut and Slack	2 75
Kentucky lump, per load	
" nut, "	
" Slack "	
City-made Coke, per bushel	100
Kentucky on cars at wholesale, per bush.	12c
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis. Nov. 9, 1874.

Specially reported by Messrs. R. P. ELMORE & Co.

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Briar Hill, select	$8 50
Lehigh Prepared	10 50	Blossburgh	8 00
Lackawanna	9 50	Pittsburgh	7 50

New Orleans, La. Nov. 7, 1874.

Good supply and firm demand. Stock on the 1st inst., 147 boats and 4 barges.

Pittsburgh coal, retail, per bbl	75c.
" wholesale	50c.
" to steamboats, per box	60c.
" to manufacturers, per bbl	65c.
" shipments per hhd	$7 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	$9 00
Spadra (Arkansas) coal, retail, per bbl	75c.
Mt. Carbon, wholesale, per bbl	45c.
" " retail per bbl	65c.
Virginia Cannel, per bbl	90c.
Scotch Cannel, per bbl	1 25

Pittsburgh, Pa. Nov 9, 1874.

Reported by our Special Correspondent.

Business remains dull, and prices remain unchanged. The Ohio river is said to be as low at present as at any time during the past twenty years, so that there is not much prospect of sending below the large quantities of coal now awaiting shipment very soon. The Italian miners still keep at work, although much dissatisfaction prevails on the Connellsville Railroad as to those employed on that road.

Per ton of 2000 lb. and Bushel of 76 lb.

per ton.		per ton
Youghiogheny coal	$2 00	Pittsburgh retail delivered per bushel	9c@10c
" coke	2 50		
Connellsville coal	2 10	Anth'cite on cars Lehigh	$7 75
" coke	2 75	" " Wilkes-Barre	6 75
Pittsburgh coal	1 85		

Twenty-five to fifty cents per ton additional for delivery.

San Francisco.

From the *Commercial Herald*, October 29.

Imports from January 1st to October 16th :

Anthracite	8,847	Vancouver Island, tons	40,185
Australian, tons	84,042	Bellingham Bay, tons	11,385
Coos Bay, tons	38,533	Rocky Mountain, tons	323
Cumberland, tons	12,649	Seattle, tons	4.235
English, tons	14,462	Mt. Diablo (9 mos.)	151.166

Imports for the week have been of considerable importance. A number of cargoes of Australian sold prior to their arrival at less than $12, while those now here unsold are held at $10 and upward. The trade is well supplied with nearly all descriptions, and West Hartley is being jobbed out to families at very low rates, quotable by the cargo ex-ship at $11. We note the following arrivals from New South Wales, etc.: *River Lune*, 1630 tons ; *McCallum*, 2375 tons ; *Buffon*, 560 tons coal and 124 tons coke ; *Peer*, 1610 tons ; *Tanjore*, 1145 tons ; *Derbyshire*, 701 tons "Brisbane ;" *Cape Horn*, 1700 tons "Dundee ;" *Amethyst* from Bellingham Bay. 500 tons. Usual supply received from Coos Bay, Vancouver Island and Mt. Diablo. Australian spot cargoes quoted at $10@10 25 ; Wellington, $11@11 50 ; Coos Bay, $10 ; Bellingham Bay, $8 50. The Cal. Mt. Diablo mines, Black Diamond and others, continue to produce largely of steam coals, finding ready sale at $6 25@8 25 per ton for coarse and fine—the latter screenings being preferred by all local factories to the lump. Another coal-laden vessel, bound from Liverpool for San Francisco, is reported lost by fire. The *Mogul* had 1800 tons coal consigned to FORBES & Co., of this city, and was abandoned near the Marquesas Islands. This makes six vessels bound from Europe to the Pacific coast with coal, which have taken fire within three months.

St. Louis, Mo. Nov. 9, 1874.

Specially Reported by the COLLINSVILLE COAL AND MINING COMPANY.

ANTHRACITE.

Per ton of 2000 lb.

	City delivery.
Lehigh Lump	$13 50
Lackawanna and Wilkesbarre	12 50
Semi Anthracite	9 50

BITUMINOUS.

Per ton of 2000 lb.

	E. St. Louis.	City delivery
Washington Indiana—smithing	$4 00	$4 87
O'Fallon, Ills	2 00	3 00
Collinsville and Belleville, Ills	1 75	2 75
Indiana Cannel	6 00	7 00
Missouri Cannel	....	5 00

Retail, 25c. per ton additional.

Montreal. Nov. 9, 1874.

Reported by our Special Correspondent.

Per ton of 2,240 lb.

Scotch Steam	$4 50@4 75	Cape Breton Steam	$4 00
Pictou "	4 25	Newcastle Smiths	5 50

Anthracite at retail, 2,000 lb., delivered, less 5 per cent.

Egg	$8 00	Nut	$8 00
Stove	8 50	Chestnut	7 75

Toledo, Ohio. Nov. 9, 1874.

Per ton of 2000 lb.

Specially reported by Messrs. GOSLINE & BARBOUR.

Retail.		Retail.	
Wilkes-Barre and Scranton, Large and Small Egg	$3 00	BITUMINOUS. Blossb'g and Cumberl'd	$3 00
Stove	8 25	Massillon Lump	6 00
Chestnut	8 00	Briar Hill	7 00
Lehigh Lump	10 00	Straitsville	3 75
		Hocking Valley	4 00

Halifax, N. S. Nov. 9, 1874.

Reported by our Special Correspondent.

The prices of coal at Halifax have varied very little since our last advices. They are as follows :

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 50	Little Glace Bay	3
Gowrie	3 50	Blockhouse	
Victoria	3 50	Albion (at Railroad)	

Toronto, Ont. Nov. 9, 1874.

Reported by our Special Correspondent.

ANTHRACITE.

	per ton.		per ton.
Broken	$7 65	Chestnut	$7 65
Egg	7 65	Lehigh	9 00
Stove	8 15		

BITUMINOUS.

Blossburgh	7 50	Screenings	5 00
Briar Hill	7 00	Soft Nut	5 50

Rates of Transportation on Anthracite Coal to Tide Points.

**From Mauch Chunk to New York* "towing limits," via Morris Canal $2 71

* *From Mauch Chunk to Jersey City* "for reshipment," via Lehigh Valley R. R. 2 51

‖ *From Phillipsburg to Hoboken* "for shipment," via Delaware, Lackawanna & Western R R 1 38

† *From Penn Haven to Elizabethport, Port Johnston and Hoboken*, via Central railroad of New Jersey 2 47

‡ *From Mauch Chunk to Elizabethport, Port Johnston, Hoboken and South Amboy*, via Lehigh Valley R. R. 2 31

From Port Delaware to New York and Jersey City, via Morris Canal 1 74

From Mauch Chunk to Philadelphia via N. P. R. R 75

From Schuylkill Haven to Philadelphia, via canal. Freight 65c., tolls $1 10 ..... 1 75

From Tumaqua to Port Richmond "for shipment," via P. & R. R. R. 2 07

From Schuylkill Haven to New York, via canal 2 72

From Upper Lehigh to Jersey City, via Central R. R. of N. J. 3 24

From Tamaqua to Philadelphia, via Phil. & Read. R. R. main line 2 17

On canal coal at Jersey City an additional charge of 20 cents per ton will be made for transferring coal from boat to boat, and thirty cents per ton for placing the same on the wharves and re-shipping.

The rate on coal for way-points on the New Jersey railroads will be $1 15 per ton from Mauch Chunk to Phillipsburg.

‖ 42 cents additional to this rate is added on coal shipped for consumption.

† The rate from Phillipsburg to these points is $1 09 per ton less. This rate does not include wharfage or shipping expenses at tide ports.

‡ From Penn Haven to these points it is 16 cents additional, and from Phillipsburg the rate is 93 cents less.

* At a recent meeting of the N. Y. and Lehigh Coal Exchange, it was decided to make the price of coal at this point for *way trade* the same, whether shipped via canal or railroad.

Freights.

We note the following as the nominal rates to Eastern points from Elizabethport and Port Johnston, charters having recently been effected at the figures annexed. Vessels continue plenty, with the usual scarcity of orders. Boston, $1 20 to $1 35; Fall River, Providence and Newport, 85c.; Bridgeport and New Haven, 65c.; Portsmouth, 1 30, and New Bedford, 85c. No change has transpired in the rates from Philadelphia. We accordingly quote as in our last: To Boston, $1 60, and Providence, $1 35. A reduced inquiry, with a steady feeling, characterizes the condition of Baltimore and Georgetown shipments. We quote rates unchanged, as compared with our last, viz.: to New York, $1 35 to $1 40, and to Boston, nominally, $1 65.

REVIEW OF THE BRITISH COAL AND IRON TRADES.

England.—The dispute between the Northumberland colliers and their employers has been arranged by a reduction of 14 per cent. on the advance in wages, which is now reduced from 40 per cent. to 26 per cent. above the wages of 1871.

The wages question in Yorkshire and Lancashire is still unsettled, and the men, to the number of nearly 30,000, are on strike against a proposed reduction of 20 per cent. The men agree to accept the arbitration offered by the masters, but desire a sliding scale for wages, and this the masters have refused.

The general prospect of the wages question throughout the English coal mines is still further reductions, for while English coal is now being sent in considerable quantity to Belgium and France, Belgian irons are being sold in the very heart of England at prices very much below those asked for English iron made on the spot. The iron men, therefore, call loudly for cheaper coal, and the coal masters are cutting down wages to meet the question.

Best house coal is sold at from 15/ to 17/ per ton at the pits; gas coal at 9/ 6d., and nuts at 7/@10/. Duff is very low. Best coke, 17/ 6d.

At London, house coals are quoted 23/@27.

The iron trade in the North of England is without change in prices, but shows a somewhat better demand.

Bars are quoted, £9 5/@9 10/.

Pig iron in Staffordshire, 80/@82/ 6d.

In South Staffordshire only 74 furnaces out of 153 are in blast, which sufficiently indicates the extreme depression in trade.

Wales.—The iron trade is exceedingly dull, and coal sympathises with it, except for steam and house coals, for which there is a good demand.

Wages at the iron works are to be reduced.

The following are the contract rules, to the adoption of which the Welsh miners object:

"The new rules enact that no person shall absent himself from his employment without the previous permission of the officer in charge. They also make provision for a fixity of hours in the commencement and cessation of labor, and stipulate that on each working day every person shall do a day's work." The conditions, however, generally received elsewere, are entirely new to the colliers, and the men of the Rhondda Valley have already resolved to reject the rules as tyrannical and arbitrary. In the other districts also the miners evince a strong dislike to the acceptance of regulations to be enforced. The principality have just determined to enforce another reduction of 10 per cent. in the wages rate

Scotland.—There has been a good deal of activity in the iron market during the last few days; but warrants, as was the case last week, have not fluctuated much in price, 82/ per ton being about the average figure. Makers' stocks are said to be increasing, and their prices are falling. The finished iron trade is decidedly dull on the whole, though some manufacturers are well supplied with orders. Prices are in many cases as much as 2/ 6d. per ton lower than at the date of our last report, and it is held by merchants that even lower quotations must be made before any marked improvement in demand takes place. The tendency of coal prices is downwards, owing to the dullness of the demand. Notwithstanding the indifferent state of trade, some miners are claiming advances of wages, and at some pits they have been successful.

We may quote Gartsherrie and Coltness No. 1, 105/, No. 3, 83/; Summerlee, 97/ 6d. or 1/ per ton more, f. o. b.

Glengarnock, 96/; Eglinton, 87/, f. o. b. at Ardrossan; Warrants, 84/ 6d. There are 119 furnaces in blast out of a total of 157.

The quantity of pig iron in store at Glasgow, 30th October, was 17,386 tons, compared with 38,000 tons same date last year.

COAL.—The price of Wishaw house coal for shipping is 12/ 6d.@13/. Best household delivered, 16/@18/; main and common, 8/ 7d.@9/; best splint, 9/@10/; dross, delivered, per 24 cwt. 6/ 6d.@7/ 6d.

The miners' wages are about 5/ per day, but there is much grumbling at it.

IRON MARKET REVIEW.

New York.

Nov. 13, 1874.

American Pig;—There is no change to report in the market for this article. The tendency to lower prices is quite plainly marked, and prices may be said to have declined since our last report. The Lehigh Crane Iron Company is reported to have sold 1,000 of No. 1 x to a pipe foundry at $23 75 cash, per ton at the works, or equal to $25 75 at Hoboken. The Thomas Iron Company reports sales of Nos. 1 and 3 at the ruling quotations, and 500 tons No. 2 x for which the price was not given. With the prevailing low prices and prospects of still lower ones, it is gratifying to learn that some works are not running at a loss, and with prospects of lower fuel and a reduction in the rates of transportation on both fuel and ores, it is to be hoped that the ironmasters may be able to furnish a still cheaper article, and at a profit that should remunerate them when there is a demand to give steady employment to their furnaces The nominal quotations are $27@28 for No. 1 foundry; $25@27 for No. 2; $23@24 for gray forge.

Scotch Pig.—The market continues rather bare of stock, and what is arriving had been sold ahead, so that transactions taking place now are not worthy of notice. We quote: Eglinton $37@$38; Glengarnock, $39; Coltness, $40@$41.

Rails.—In American we learn of no transactions. Eleven hundred tons of Foreign were sold at private price in bond. This leaves about 4000 tons of 56 lb. and 1000 tons 50 lb. Foreign rails available for sale. There are about 15,000 to 16,000 tons more, but they are in a manner tied up, and unless let loose soon, some of them will have to be marketed as damaged goods. We quote Foreign at $48@$49, gold, and American at $51@$54, currency, at the mills. There is an inquiry for 20,000 tons upon this market, but there is no confidence expressed in this order being placed. The same parties are reported to have purchased 10,000 tons in England, to be shipped direct to Galveston, but we have not had it confirmed. A South American inquirer, who looked over the stocks of Foreign in this market, has been driven to England. There is nothing new to report in steel rails. Two separate sales of 5000 tons each, made about two weeks ago, are reported to have been made at $75@$80 per ton, respectively.

Old Rails.—There is nothing doing, and the quotations are nominally $28@$30.

Scrap Iron.—There have been no transactions, and in the absence of business quotations are quite nominal.

Boston.

From the *Commercial* of Nov. 7.

Pig has had, as is now rather the tendency of trade, an apathetic and unsatisfactory business, moving irregularly a ton or a five-ton lot; not in apparent conformity to inducements in prices, but rather more as to the tone of the buyer's mind as to the stability of quotations. Sales of No. 1 at $31 50 and No. 2 at $29 are every-day occurrences, and cover the most trifling lots. These embrace the rates of both prominent and unknown brands, the latter, which in cases are of fine quality, shading off to gobble any sale possible. Foreign Pig is apparently dead stock. Excellent grades of American, as substitutes, at very much less prices, having now control of the market.

Bar is moving in a cautious, insipid way at from 2¾ to 3 cents in job lots, and when a ton or so is needed $63 a ton is quotable.

Chicago

Nov. 10, 1874.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron.

Quotations are as follows:

No. 1 Coltness	$46 00@ ....
No. 1 Gartsherrie	45 00@ ....
No 1 Summerlee	44 00@ ....
No. 1 Glengarnock	42 00@ ....
No. 1 Eglinton	40 00@ ....
Warner's "American Scotch"	41 00@ ....
Massilon No. 1 Foundry	37 00@ ....
No. 1 Grand Tower Mo. ores (Bituminous)	33 00@ ....
No. 2, " " "	30 00@ ....
No. 1 Mill	28 00@ ....
Union "A" 1 (Anthracite)	32 00@ ....
Union "B" 1 (Anthracite)	30 00@ ....
No. 1 Lake Superior (charcoal)	34 00@ ....
No. 2 Lake Superior "	32 00@ ....
No. 3 Lake Superior "	30 00@ ....
No. 4 Lake Superior "	42 00@ ....
Bessemer Steel Rails	85 00@90 00
New Iron Rails	55 00@ ...
Old Rails	28 00@30 00

Cleveland.

Nov. 11, 1874.

Specially reported by Messrs. C. E. BINGHAM & Co., dealers in pig iron and iron ore

Quotations remain as follows:

No. 1, Anthracite Foundry	$.... @....
No. "	.... @....
No. 1, Bituminous "	31 00@ ...
No. 2, " "	29 50@....
No. 1, " Gray Forge	27 00@....
No. 1, Massilon Black Band	.... @....
No. B-1 " "	.... @....
No. 2 " "	.... @....
No. 1, Lake Superior Charcoal	33 00@....
No. 2, " "	32 00@....
No. 3, " "	34 00@....
No 4, " "	35 00@....
Nos. 5 and 6 "	36 00@....
American Scotch, No. 1, Cherry Valley	34 00@....
" " No. 2	31 00@....

Cincinnati.

Nov. 10, 1874.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

Our pig iron market remains as last reported. We quote:

CHARCOAL.	
Hanging Rock, No. 1, Foundry	$30 00@32 00—4 mos
" No. 2, "	28 00@29 00—4 mos
Mill	26 00@27 00—4 mos
Tenness e No 1, Foundry	29 00@30 00—4 mos
Tennessee. No. 2 "	27 00@28 00—4 mos
" Mill	26 00@ ....—4 mos
Missouri, No. 1, Foundry	32 00@33 00—4 mos
STONE COAL.	
Ohio No. 1, Foundry	28 00@30 00—4 mos
" No. 2, "	26 00@27 00—4 mos
Ohio Mill	25 00@26 00—4 mos
Missouri, No. 1, Foundry	29 00@30 00—4 mos
" No. 2, "	27 00@28 00—4 mos
" Mill	26 00@27 00—4 mos
CAR-WHEEL.	
Hanging Rock, C. B.	50 00@53 00—4 mos
Tennessee "	45 00@48 00—4 mos
Missouri "	45 00@48 00—4 mos
Alabama "	45 00@48 00—4 mos
BLOOMS.	
Charcoal	80 00@ 90 00—cash
SCRAP IRON.	
Cast	75@ 1 00—cash
Wrought	1 25@ 1 50—cash

Indianapolis, Ind.

Nov. 9, 1874.

Specially reported by NELSON KINGMAN, broker and dealer in pig iron, etc.

Continue quotations.

New Rails at mill	$62 00@64 00
Old Rails "	30 00@31 00
Hanging Rock Charcoal Pig No. 1 foundry	35 00@36 00—4 mos
" " " " " 2 "	32 00@33 00—4 mos
" " " Mill	29 00@31 00—4 mos
STONE COAL.	
ndiana No. 1 Foundry pig Planet furn'e.	32 00@34 00—4 mos
" 2 " "	31 00@32 00—4 mos
" 1 Forge "	29 00@ ....—4 mos
" 2 " "	27 00@ ....—4 mos
Ohio No. 1 Foundry pig	33 00@34 00—4 mos
" 2 "	31 00@32 00—4 mos
" 1 mill	28 00@30 00—4 mos
Merchant Bar, card rates	60 00@62 00—3 mos
1st quality C. H. No. 1 Boiler Plates, per lb	5¾@6 c.—3 mos
1st " Com. Sheet, for No. 24, W. G. "	5 c.—3 mos
1st " Charcoal Sheet " " "	6 c.—3 mos
Best Bloom Galvanized Sheet, discount	20 per cent.—cash.
2d quality " " "	30 " —cash.

f. o. b. in Indianapolis.

Louisville.

Nov. 10, 1874.

Specially reported by GEORGE H. HULL, Esq.

The market is dull at quotations, and round lots cannot be sold except at some concession in price. There is not much disposition to force iron on the market, and the sales are limited.

The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.	
No. 1 foundry, from Hanging Rock ores	$30 00@33 00
No. 2 " " "	27 00@28 00
No. 1, forge, " " "	25 00@26 00
No. 1, foundry, " Tennessee "	28 00@30 00
No. 2 " " "	26 00@27 00
No. 1, forge, " " "	25 00@26 00
No. 1, foundry, " Alabama "	28 00@30 00
No. 1 " " Iron Mountain "	30 00@33 00
HOT BLAST—STONECOAL.	
No. 1, foundry, from Missouri ores	30 00@32 00
No. 2, " "	28 00@30 00
No. 1, forge " "	27 00@28 00

COLD BLAST—CHARCOAL.

Car Wheel from	Hanging Rock ores		45 00@50 00	
"	" Tennessee	"	43 00@45 00	
"	" Alabama	"	44 00@46 00	
"	" Georgia	"	44 00@46 00	
"	" Missouri	"	43 00@45 00	
"	" Kentucky	"	43 00@46 00	

Milwaukee, Wis. NOV. 9, 1874.

Specially reported by Messrs. R. P. ELMORE & Co.

Per ton of 2,240 lb.

Scotch ranges			$40 00 to	$45 00
No. 1, Lake Superior Charcoal			36 00 to	8 00
" 2, " "	"		34 00 to	36 00
" 1, " "	Anthracite		35 00 to	36 00
" 2, " "	"		33 00	

Pittsburgh, Pa. NOV. 10, 1874.

Specially reported by A. H. CHILDS, Esq., commission merchant for the sale of pig iron, blooms, ore, &c.:

There is nothing encouraging to report regarding the Pig Iron market. Prices are weak, and pending the present negotiations relative to lower wages in the mills, very little metal is changing hands.

No. 1 Foundry, anthracite or bituminous	$27 50@28 00	4 mos
No 2 " " "	26 00@27 00	4 mos
Gray Forge " "	25 00@25 50	4 mos
White and mottled "	22 00@23 00	4 mos
Hot blast charcoal	30 00@35 00	4 mos
Cold " "	40 00@50 00	4 mos

From the *American Manufacturer*.

PIG IRON.

WEDNESDAY, NOV. 11, 1874.

Trade in this article continues quiet, and the market presents but little that is really important to which reference has not already been made. The volume of business in the aggregate was somewhat larger than for several weeks preceding, from which it is evident that the mills generally have little or no stock, but the demand is still restricted entirely to supplying immediate wants, and there is no question but that this policy will be closely adhered to during the balance of the year. Mill owners can see no reason why they should buy except to meet their immediate requirements, in view of the fact that the general tone and spirit of the market continues in buyers' favor; and notwithstanding some operators are impressed, apparently, with the belief that prices have touched bottom, there are others equally as well informed, and whose opinions are entitled to fully as much consideration, who take an entirely different view of the situation. One thing is certain, there is little or no hope of an early improvement in prices, and notwithstanding current rates do not cover the cost of manufacture, the indications generally point to a still further decline. Producers, with few exceptions, are anxious to realize, many of them who were unwilling to accept $26 50@$27, 4 mos., in the summer, are now willing to take current rates, $25, 4 mos., which corroborates what we have already stated, that they have no hope of an early improvement as regards prices. Prices have undergone no quotable change since the date of our last report, but there has been a decline of fully one dollar per ton within the past month or six weeks, which puts pig down lower than it has been at any time since the panic, and if we are not mistaken, since before the war. Just after the panic, it will be remembered, that there were some few round lots sold at $25 cash, after which it rallied and advanced to $26 50@$27, 4 mos., whereas to-day, $25, 4 mos., equal to $24@$24 25, cash, are selling rates for good mill irons.

MANUFACTURED IRON.

Trade in finished irons continues to fall off slowly, and not only are orders coming in sparingly, but, furthermore, they are mostly small, which indicates that jobbers, as well as consumers, are buying only for immediate wants, and there is not much doubt but that this course will be pretty closely adhered to during the balance of the year. However, while the mills are all running, some of them have dropped from double to single turn, and while it is probable that orders will be few in number and mostly for small lots, there is not much doubt but that the majority, if not all, of our manufacturers, will be able to keep running single turn at least during the balance of the year. Prices, as intimated in our last review, are weak, in sympathy with the raw article, although there has been no quotable change during the past week. Following are the ruling rates:

Merchant Bar	2.5@2.6, 60 days.
Hoop Iron	4.8, "
Sheet Iron	4.6, "

Pig metal sales reported for the *American Manufacturer* for the week ended November 11, 1874:

BITUMINOUS COAL SMELTED FROM L. S. ORE.

30 tons	No. 1 foundry	$27 00—4 mos
20 "	No. 1 foundry	26 50—4 mos
10 "	No. 2 foundry, extra	29 00—4 mos
970 "	gray forge	25 00—4 mos
150 "	gray forge	24 00—cash.

CHARCOAL.

35 tons	No. 1 foundry, H. R.	$34 00@36 00—cash.
10 "	No. 2 foundry, H. R.	32 00—4 mos
72 "	No. 1 foundry, Tenn.	31 00—4 mos
50 "	Cold Blast, H. R.	55 00—4 mos

COKE.

50 tons	gray forge, Connellsville	$25 00—4 mos
100 "	gray forge, Allegheny, C. S.	27 00—time.

BLOOMS.

10 tons	Missouri	$80 00—cash.

MUCK BAR.

100 tons	Neutral	$42 00—4 mos

NOTE.—In our reports very little of the iron made in the city is included, as in most instances the parties owning the furnaces use the iron in their mills. This will add from 3000 to 3500 tons per week to our report.

San Francisco.

From the *Commercial Herald* of Oct. 29.

The *Oriflamme* from Oregon brought us 57 tons of pig iron; this we continue to quote at $46. Imports of Scotch pig iron recently at hand were mostly sold prior to arrival. The consumption of this article is at present very large, and our foundries are actively employed. We quote the spot price $45 @47 50, according to brand. Invoices to arrive can be purchased upon more favorable terms. Tin plate is dull and nominal. We continue to receive liberal supplies of American brands of cast steel from the East by rail, thus displacing old well-known brands of English to a very great extent. Since the 1st inst., leading dealers, as before noted, reduced the price of bar, bundle, and plate iron about 7 per cent. all around, say ¼@¼c. per lb. The steamship *Granada* for Panama carried en route for New York 3000 pigs Selby's refined lead.

St. Louis.

From the *Railroad Register*, November 6.

The two remaining furnaces at St. Louis have now banked up, and all the blast furnaces in this city are out of blast, or banked up till pig iron is in better demand. The last to suspend operations are the Vulcan Iron Works and the South St. Louis Iron Company's stacks

The Vulcan rail mill is still running on railroad iron.

Railroad iron has exhibited a downward tendency, and the quotations of the Vulcan Iron Works now range from $63 to $65.

Bar iron is quoted at 3 cents, card rates, but large orders are filled at a discount of 1-10 to 2-10.

The following are quotations of pig iron:

No. 1 foundry. Stone coal, Mo	$32 00@$34 00	
No. 2 foundry, " "	28 00@ 30 00	
Mill " "	26 00@ 28 00	
No. 1 foundry, charcoal, Mo	31 00@ 33 00	
No. 2 " " "	30 00@ 31 00	
White and mottled charcoal, Mo	33 00@ 34 00	
Tennessee charcoal, No. 1 foundry	32 00@ 34 00	
Alabama charcoal, No. 1 foundry	32 00@ 34 00	
Scotch, according to brand	43 00@ 45 00	
Massillon	38 00@ 40 00	
American Scotch	43 00	
Hanging Rock	35 00	
Missouri, cold blast charcoal	48 00@ 50 00	
Tennessee, " "	45 00@ 49 00	
Kentucky, " "	55 00@ 57 00	
Alabama & Georgia, co'd blast charcoal	47 00@ 49 00	
Missouri charcoal blooms	85 00	
Ore—Iron Mountain	8 00	
Maramec	6 50	

METALS.

NEW YORK, NOV. 13, 1874.

Gold Coin.—During the week past, gold has ranged from 110 to 110⅜, and closed yesterday at 110⅜.

Bullion.—Fine silver bar is quoted at $1 26½@$1 27¼, gold, per ounce, and fine gold bar at par ($20 67, gold, per ounce.

Copper.—The sales for the week foot up about 500,000 lb. at 22½c.@22⅝c. for spot, and 23c.@23¼c. for futures. The price to-day is firm at 22¾c @23c. on spot, with an upward tendency, and a fair demand from manufacturers. Cable information from London reports considerable activity. Chili bars are quoted at £87 10/@£89. The last charters are reported to have a strengthening effect upon the market. The mail advices say that the demand is mostly for consumption and export, considerable having been taken by cartridge manufacturers who have large contracts with continental governments. On the 23d. ult. advices which had been much delayed, owing to the interruption in the direct telegraph line, came to hand dated the second ult. at Valparaiso of charters for the month of September representing about 3,100 tons fine, which was much less than was anticipated, and gave considerable activity to the market, 600 tons changing hands that day. The stocks of West Coast Produce are estimated to have been 12,350 tons on Oct. 31st, against 14,814 tons Oct. 1st, and 20,887 tons Oct. 31, 1873.

Chili exports to 1st October are:

	1871.	1872.	1873.	1874.	
Exported to 31st Aug..	24447	31724	27331	31112	Tons fine.
Loading on do.....	8968	6106	5443	5127	"
Chartered to 1st Oct...	3016	2356	2500	3047	"
	36431	40186	36274	39286	

Tin.—There is something doing in a jobbing way with 25¼c @26c. for Banca; 21½c. Straits; 21¾c. L. & F.; and 21¾c. Refined English. Cable advices quoted L. & F. at £99, and Straits at £94 with good demand. Messrs. JAMES & SHAKESPEARE, in their circular of Oct. 30, say:—"English remains quiet at list quotations. In foreign sorts considerable activity has existed since the date of our last issue, Australian again forming the chief part of the business; but, notwithstanding that the dealings were on an extensive scale, the largeness of the quantity available quite prevented any improvement occuring in values. A moderate trade was also done in Straits, which being rather scarce on the spot, fetched comparatively high rates, but parcels to arrive were obtainable at more reasonable terms."

Lead.—The sales for the week past amount to about 250 tons, at $6 25 to $6 35, gold. The price of domestic in the general market is about $6 30, while the Government has not been selling any, but holding firm at $6 35. About 150 tons of Western Lead has arrived during the past week. It was purchased some time ago at a much lower figure than prevails today. The Western market is pretty firm at $6 37½@6 50. The supply of bullion is not large, and although trade is quiet, prices have an upward tendency. The stock of Foreign is very light, and held at $6 75@6 80. Messrs. JAMES & SHAKESPEARE,, under date of Oct 30, say:

"Manufacturers of English Pig are asking a further advance of about 5/ per ton, and owing to press of orders and scarcity of supplies, are unable to give prompt deliveries;" and quote English pig at £23@23 10/.

Spelter and Zinc.—There has been something doing in Domestic Spelter during the last week, and prices are firm at 6½c.@6¾c. There is nothing doing in Foreign, and none in this market. Mail advices report the London market firm and advancing, £24 10/ having been asked for English on the 30th ult. Sheet zinc is firm at 8¾c@9c., gold, with little in stock.

Antimony.—This article is in good demand, with small stock, and held firmly at 12c.@12½c., gold.

Manganese.—Georgia manganite is held at 2½c.; gold; New Brunswickwick ditto, 3c.; Virginia Psilomelane, 2c.; Pyrolusite, 4c. There is a considerable quantity of manganese mined in California, said to contain 70 to 75 per cent., and reported as very valuable for steel making.

Quicksilver.—The price in San Francisco is quoted at $1 50. In London, it is quoted £25 per flask (75 lb.) In New York the price continues at $1 60

Miscellaneous Stocks.

NEW YORK, NOV. 13, 1874

We note an increased activity of the following list, with a decided improvement in quotations, as compared with our last. Our quotations of the items dealt in at the Philadelphia Stock Board represent the prices at which sales were made on the 11th inst. The quotations of the market here exhibit yesterday's selling prices.

New Jersey Central R. R. Co	—	107⅛
American Coal Co	—	60
Maryland Coal Co	—	19
Pennsylvania Coal Co	—	235
Quicksilver Mining Co. Preferred	—	39
Reading R. R. Co.	—	55
Delaware and Hudson Canal Co	—	116
Lehigh Coal and Navigation Co	—	48⅛
Lehigh Valley R. R. Co	—	61
Catawissa Preferred	—	41⅛
Delaware, Lackawanna & West. R. R. Co.	—	103⅜
Consolidated Coal Co.	—	46⅝
Little Schuylkill R. R.	—	47
Huntington & Broad Top R. R. prefrd.	—	21
St. Louis & Iron Mountain	—	—
Susquehanna Canal	—	—
Deleware Division Canal	—	51⅛
Spring Mt. Coal Co	—	71
Cumberland Coal and Iron Co.	—	48

Boston Stock Market.

BOSTON, NOV. 12, 1874.

With the exception of a decline of 50c per share in Allouez, we note a general advance of the following list: Quincy is quoted at $41¼ per share, an advance of $3¼ as compared with our last. The transactions in copper stocks during the operations of the Board, on the 11th inst., were as follows: 150 shares of Quincy at $42 per share—50 shares Copper Falls at $10 per share—250 shares of Allouez at from $6 to 6¼—150 shares of Petherick Mining Co. at $1, and 25 shares of Pewabic at $6 per share.

Allouez	6	Pewabic	—
Calumet and Hecla Co.*	135	Phœnix	—
Copper Falls	10	Quincy	41¼
Central	—	Ridge	6
Franklin	—	Rockland	—

* Ex-dividend.

San Francisco Stock Market.

BY TELEGRAPH.

NEW YORK, November 12, 1874.

We have advices from the San Francisco Stock Board, dated the 10th inst. The market is irregular, with the general tendency of the list upwards. The most noteworthy feature in the report is the decline in Gould and Curry, our quotations placing it at $15 per share, a decline of $14 as compared with our last, or nearly one half. Yellow Jacket remains firm, at a decline of $1 per share. Consolidated Virginia still continues to advance, sales of which were effected during the operations of the Board at $41 per share, an advance of $21 as compared with quotations last week. A dividend of $3 per share has been declared by the Belcher Mining Co., payable on the 10th inst. On the 9th inst., sales were made of the following items at the prices annexed: Alpha, $17; Overman, $60; Pioche, $6, and Ophir $83 per share—the last quotation indicates an advance over the same item of $23 as compared with our report a week ago.

Savage	76	Raymond & Ely	17
Crown Point	55	Meadow Valley	5⅞
Yellow Jacket	90	Eureka G. V. Bld	8
Kentuck	17	Ophir	—
Chollar Potosi	55	Alpha	—
Gould & Curry	15	Consolidated Virginia	141
Belcher	53	Overman	—
Imperial	10⅝	Sierra Nevada	9⅛

American Institute of Mining Engineers.

OFFICIAL BULLETIN.

Announcements to Members and Associates.

I. The ENGINEERING AND MINING JOURNAL, which is the Organ of the Institute, and contains its proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. The Council earnestly requests members to forward to the Secretary, for preservation, copies of all printed mining and geological reports, particularly pamphlets, which may fall in their way. It is believed that by this means a large amount of valuable fugitive information concerning different regions and properties in this country, may be caught and preserved.

THOMAS M. DROWN, Secretary, Lafayette College, Easton, Pa.

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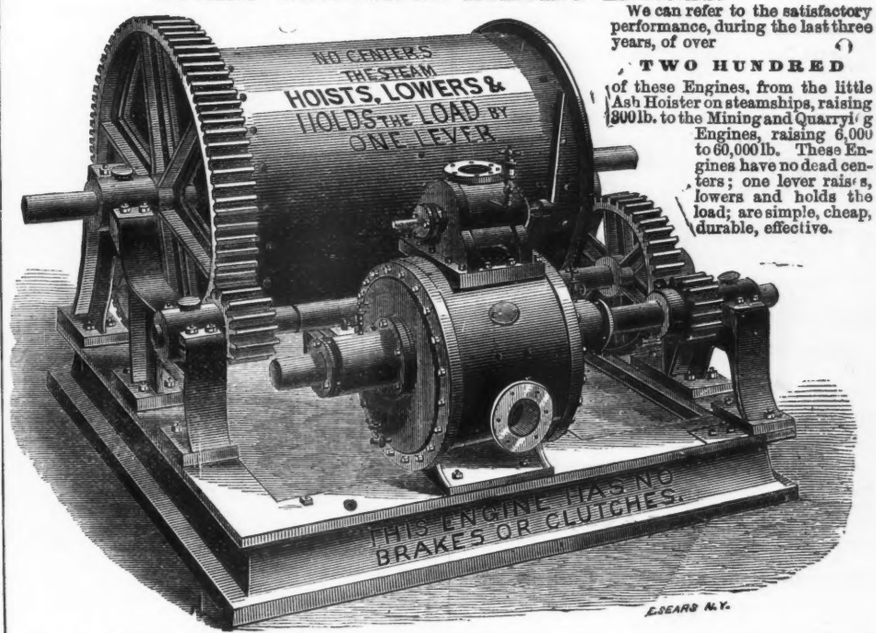

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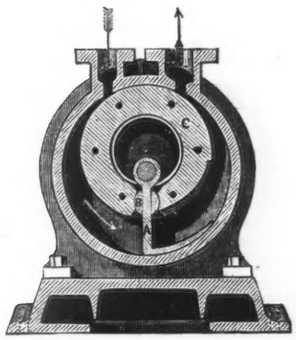

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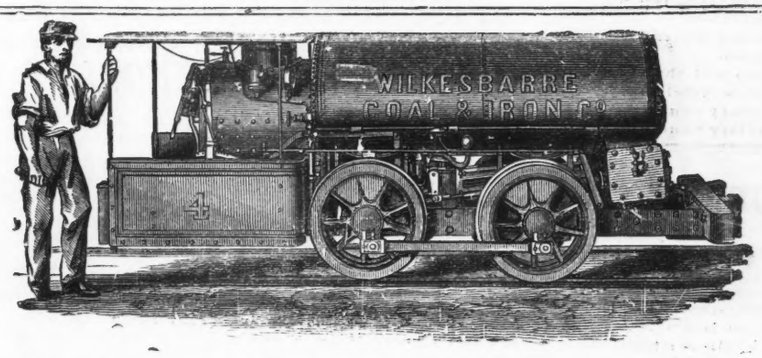

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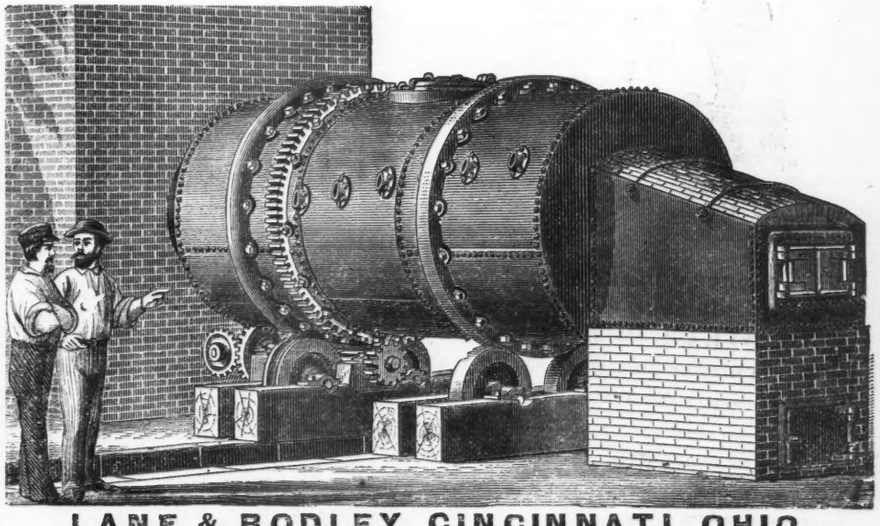

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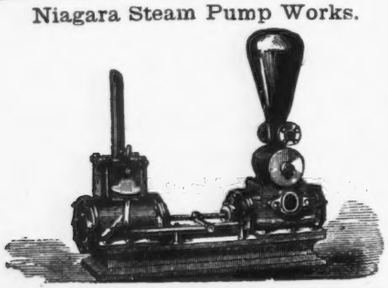

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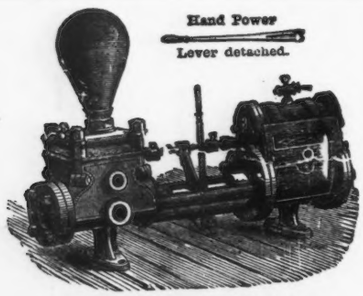

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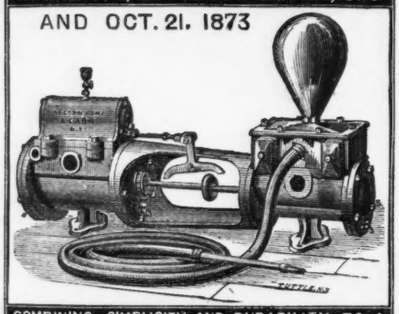

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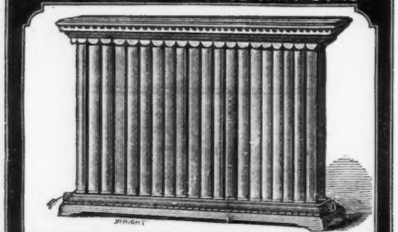

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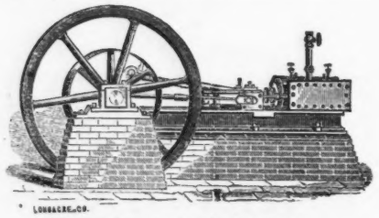

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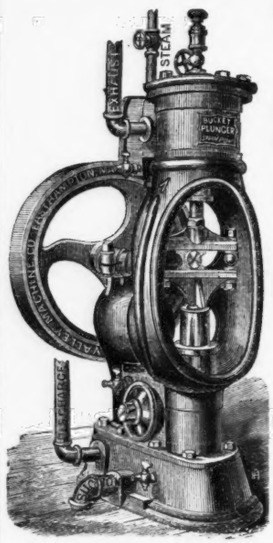

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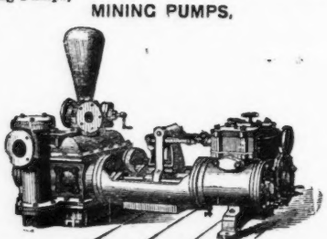

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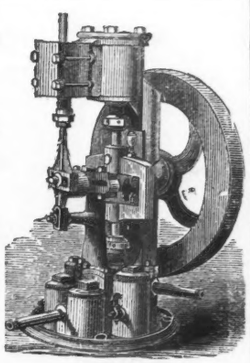

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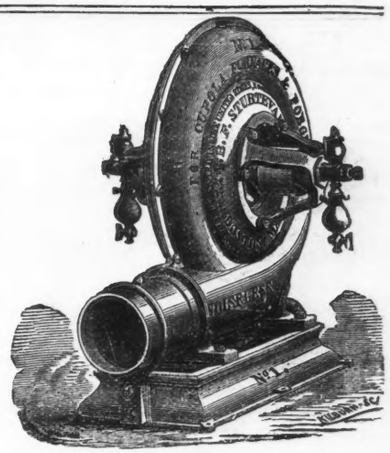

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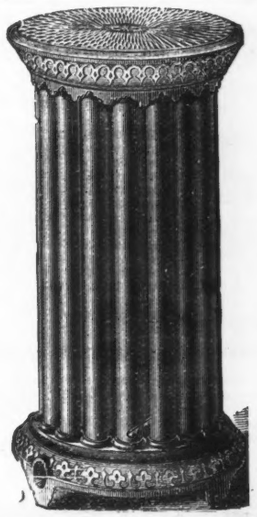

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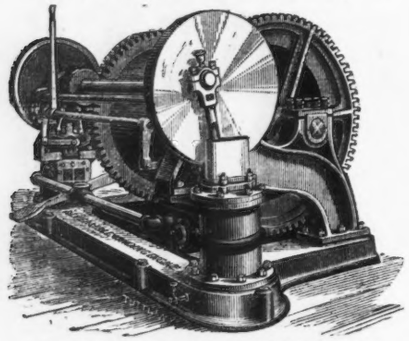

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☞ Look at following extract, Ingersoll Co.'s letter of excuses, ENGINEERING AND MINING JOURNAL, June 6, and compare with their advertisement: "I had *two* drills at the mine from the commencement, one beginning work on the 4th of April, the other on the 7th of the same month, and both drills working until the 1st of May." Signed, C. N. ELLIOTT, Superintendent Ingersoll Rock Drill Co.
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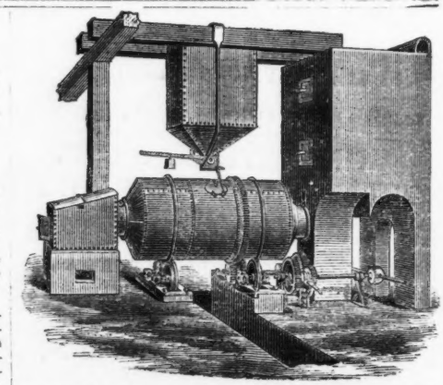

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